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Staff Assessment and
Draft Environmental Impact Statement
and
Draft California Desert Conservation Area Plan Amendment

SES SOLAR TWO PROJECT

Application For Certification (08-AFC-5)
Imperial County

U.S. BUREAU OF LAND MANAGEMENT and CALIFORNIA ENERGY COMMISSION

STAFF ASSESSMENT - DRAFT ENVIRONMENTAL IMPACT STATEMENT

FEBRUARY 2010
(08-AFC-5)
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STIRLING ENERGY SYSTEMS SOLAR TWO PROJECT

STAFF ASSESSMENT AND DRAFT ENVIRONMENTAL IMPACT STATEMENT AND DRAFT CALIFORNIA DESERT CONSERVATION AREA PLAN AMENDMENT

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Jim Stobaugh and Christopher Meyer

INTRODUCTION

Stirling Energy Systems Solar Two, LLC (SES Solar Two, LLC or applicant) is seeking approval to construct and operate the Stirling Energy Systems Solar Two Project and its ancillary facilities (SES Solar Two Project). The applicant is a private party that is a wholly owned subsidiary of Tessera Solar. The main objective of the SES Solar Two Project is to provide clean, renewable, solar-powered electricity to the State of California. The electricity from the SES Solar Two Project will assist the State in meeting its objectives as mandated by the California Renewable Portfolio Standard (RPS) Program and the California Global Warming Solutions Act. The SES Solar Two Project will also address other local mandates adopted by California's electric utilities for the provision of renewable energy.

San Diego Gas & Electric (SDG&E) selected the SES Solar Two Project to help meet its objectives under the legislative requirements of the RPS Program through a least-cost, best-fit competitive solicitation. Because the SES Solar Two Project is one of the three projects that SDG&E selected from the solicitation, the applicant and SDG&E entered into a 20-year Power Purchase Agreement (PPA) for the provision of renewable electricity. This PPA will help SDG&E meet both its statutory mandate to purchase at least 20%of its electric power from renewable resources by 2010 and its future electricity requirements. The California Public Utilities Commission approved the PPA on December 1, 2005. The SES Solar Two Project represents approximately 44% of SDG&E's RPS goals.

The applicant has submitted an Application for Certification (AFC) to the California Energy Commission (Energy Commission) for the proposed project. The Energy Commission is the lead State agency responsible for evaluating the environmental effects of project and for complying with the California Environmental Quality Act (CEQA) for project related discretionary actions by the Energy Commission. The project proposes the use of land managed by the United States Department of the Interior, Bureau of Land Management (BLM), therefore the applicant has submitted a request for a right-of-way grant to the BLM. The BLM is the federal lead agency for the evaluation of project effects and compliance of the proposed project with the requirements of the National Environmental Policy Act (NEPA) related to possible BLM discretionary actions related to the right-of-way grant request.

PROPOSED PROJECT

Project Location and Description

The applicant intends to develop an electric-generating facility with a nominal capacity of 750 megawatts (MW) using concentrated solar power. The SES Solar Two Project would be constructed on an approximately 6,500-acre (just over 10 square miles) site in the Imperial Valley in Imperial County, California. The site is approximately 100 miles east of San Diego, 14 miles west of El Centro, and 4 miles east of Ocotillo Wells. The

SES Solar Two site is predominantly comprised of BLM managed lands with some private parcels within the approximately 6,500 acre site. Key features of the proposed project are described briefly below and in more detail in the following sections:

The electric-generating facility will include the construction of a new 230-kilovolt (kV) substation approximately in the center of the project site, an operation and administration building, a maintenance building, and a substation building.

The SES Solar Two Project will be constructed in two phases: Phase I will consist of up to 12,000 SunCatchers configured in 200 1.5-MW solar groups of 60 SunCatchers per group. The total net nominal generating capacity of Phase 1 is 300 MW. Phase I will require approximately 2,600 acres. The renewable energy from Phase I will be transmitted via the existing 500-kV SDG&E Southwest Powerlink transmission line. The SES Solar Two Project will be connected to the grid at the SDG&E Imperial Valley Substation via a 10.3-mi long, 230-kV interconnection transmission line that will be constructed as part of the project in a corridor parallel to the existing Southwest Powerlink transmission line.

Phase II will expand the SES Solar Two Project to a total of 30,000 SunCatchers configured in 500-1.5-MW solar groups with a total net generating capacity of both phases of 750 MW. Phase II will require approximately 3,500 ac of the project site. The 450-MW Phase II will consist of approximately 18,000 SunCatchers. The additional 450 MW generated in Phase II will require new transmission capacity within the grid. This is anticipated to be provided by the proposed 500-kV Sunrise Powerlink (or equivalent) transmission line (assumed be a project independent of the SES Solar Two Project). The construction and operation of Phase II is contingent on the development of either the Sunrise Powerlink transmission line or additional transmission capacity in the SDG&E transmission system.

Solar Power Plant Equipment and Facilities

The SES Solar Two Project will use the proprietary SunCatcher technology. Each SunCatcher consists of a 25-kilowatt (kW) solar power generating system. The system is designed to track the sun automatically and to focus solar energy onto a Power Conversion Unit (PCU), which will generate electricity. The system consists of an approximately 38-foot diameter solar concentrator dish that supports an array of curved glass mirror facets. These mirrors will collect and focus solar energy onto the heat exchanger of the PCU. The PCU will convert the solar thermal energy into electricity via a Solar Stirling Engine designed to convert solar power to rotary power through a thermal conversion process. Each SunCatcher will operate independently and will generate grid-quality electricity. Power generated by groups of 60 SunCatchers will be collected through a 600-volt (V) underground power collection system. This collection system will combine the output from the units and connect each 1.5-MW group to a generator step-up unit (GSU) transformer with an output voltage of 34.5 kilovolt (kV). The output from the GSUs will be grouped into 3-, 6-, and 9-MW groups, which will be connected via 34.5-kV underground collection circuits to 48- or 51- MW, 34.5-kV overhead collection circuits, each of which will be connected directly to the on-site collection substation. The on-site collection substation will be connected via a 230-kV, double-circuit overhead interconnection transmission line for delivery of generated

electricity to the SDG&E Imperial Valley Substation, where the interconnection to the California Independent System Operator (California ISO)-controlled grid will take place.

The SES Solar Two Project includes construction and operation of an on-site substation, which will include transformers, circuit breakers, metering, and other protection required to connect the project to the SDG&E Imperial Valley Substation. The SES Solar Two Project interconnect transmission system will require construction of approximately 10.3 mi of double-circuit 230-kV transmission line to transmit the electricity generated on the project site to the SDG&E transmission facilities.

Related permanent facilities on the project site will include a Main Services Complex, which will be in a central location on site to provide for efficient access routes for maintenance vehicles servicing the SunCatcher solar field. The Main Services Complex will include the following:

Operation and Administration Building. The project administration offices and personnel facilities will be in this one-story building. This building will also contain meeting and training rooms, engineering offices, a visitor's room, and support services. The project maintenance facilities, shop, and warehouse storage will be adjacent to the operation and administration building.

Maintenance Building. The maintenance building will contain maintenance shops and offices, PCU rebuild areas, maintenance vehicle servicing bays, chemical storage rooms, the main electrical room, and warehouse storage for maintenance parts to service the SunCatchers.

Water Treatment System. The water treatment structure will be northeast of the Main Services Complex. The water treatment structure will house water treatment equipment and safe storage areas for water treatment chemicals. A motor control center for the water treatment equipment and pumps will be located within this structure. Two wastewater evaporative ponds designed for wastewater containment will be north of the water treatment structure.

Yard Tanks. The yard tanks will be at-grade steel tank reservoirs and/or polyethylene tanks. The water treatment system will include a raw water tank with a permanent booster pump station, a potable water treatment system, ground-set steel or polyethylene potable water and a fire water storage tank, a booster pump station to accommodate potable water needs and fire-flow requirements, a disinfection system, a demineralized water treatment system for mirror washing water, a polyethylene storage tank for demineralized water storage, chemical storage, reject water and sludge disposal and evaporation ponds, and various support piping, valves, and miscellaneous equipment to support the system. All tanks, foundations, and piping connections will be designed and constructed to the appropriate standards for contents and seismic zone considerations.

Control Building. The control building will be near the substation. This building will contain relay and control systems for the substation and the operations control room.

Utilities and Services for Ancillary Facilities and Structures. A diesel powered fire water pump and a diesel operated standby power generator will be adjacent to the operation

and administration building. Electric service for the Main Services Complex will be obtained from Imperial Irrigation District (IID). Electric power will be provided via overhead service from an IID overhead distribution line located on the north side of Evan Hewes Highway. Communications service for the Main Services Complex will be obtained from L3 Communications Holdings, Inc. Communications service will be provided via an overhead service from existing underground communications lines located on the north side of the railroad located south of Evan Hewes Highway

Construction Logistics Area

The applicant proposes using a temporary construction logistics area for staging contractor equipment and trailers, assembly yards, storage of materials, equipment laydown and wash area, construction personnel parking, and assembly areas for SunCatchers. The temporary facilities and structures in that construction logistics area will be:

Assembly Buildings. SunCatcher assembly will be performed in three temporary assembly buildings in the construction logistics area. These buildings will be removed after all the SunCatchers are assembled and installed. The three assembly buildings will be beside the Main Services Complex.

Transport trailer storage. Storage for trailers will be provided south of the assembly buildings in a storage facility that will accommodate 75 to 100 trailers, maintaining a 3 to 5 day inventory of SunCatcher parts during the assembly phase. These trailers will be removed and salvaged after all the SunCatchers are installed.

Laydown Areas. Two laydown areas will be provided: one on approximately 100 ac east of Dunaway Road and north of I-8, and the second on approximately 11 ac immediately south of the Main Services Complex.

Construction of the SES Solar Two Project is expected to begin in early 2010 and will take approximately 44 months for full project completion. However, renewable power from the project will come online much earlier than 44 months after the start of the project. As groups of SunCatchers are constructed and become operational, their renewable power will immediately be supplied to the grid.

Water Supply and Discharge

The proposed water source for the washing the SunCatcher mirrors is reclaimed water from the Seeley Waste Water Treatment Facility (SWWTF). Upgrades to the existing treatment plant so its effluent meets Title 22 requirements for recycled water are being funded by the applicant. SES Solar Two, LLC will have access to at least approximately 150,000 gallons (gal) and up to 200,000 gal of reclaimed water per day for use in all construction and operation activities. To access the reclaimed water, approximately 11.8 miles of water pipeline would be constructed as part of the SES Solar Two Project, extending from the SWWTF to the project's proposed water treatment plant, via the Evan Hewes Highway right of way (ROW).

Potable water will be delivered to the site by truck and stored in a 5,000 gal tank in the water treatment area. This tank will be able to provide a two to three day supply of potable water for the operating facility.

Fire Protection

The Main Services Complex will include an approximately 175,000-gal tank for water for mirror washing and fire suppression and control. Portable fire extinguishers will be located at strategic locations throughout the site. The fixed fire protection system will provide a wet, water-based sprinkler fire suppression system for the buildings. Employees will be given fire safety training, including instruction in fire prevention, the use of portable fire extinguishers and hose stations, and the reporting of fires to the local fire department.

Access Roads and Maintenance Paths

Approximately 27 miles of paved arterial roads, 14 miles of unpaved perimeter roads, and approximately 234 miles of unpaved access routes would be constructed on the SES Solar Two Project site. Site access during the construction phase would be provided from Dunaway Road, which has an existing interchange from I-8 at the southeastern corner of the site.

Site Security and Fencing (During Construction and Operations)

The 6,500 acre project site would be fenced, excluding the private parcels of land designated as not a part of the project. Access to the federal land managed by the BLM would be authorized under a ROW grant. Operations site security would consist of controlled access gates, perimeter security fencing, twenty-four hour site security monitoring via closed-circuit television and intercom, and regular vehicular patrols. Construction security would consist of fencing installed around the perimeter of the project site at the start of construction, and gated entrances and exits.

Stormwater Management Approach

A stormwater drainage system designed to match existing drainage patterns and meeting all local regulations would collect and direct all rainwater on he project site, managing the flow through the use of existing dry washes, swales, ditches, culverts, and site grading to the pre-development site discharge locations. Erosion and sedimentation controls would be implemented during construction to retain sediment on site and to prevent violations of water quality standards. These actions would be taken in accordance with project specific Best Management Practices (BMPs). A Storm Water Pollution Prevention Plan (SWPPP) would be prepared to conform to State Water Resource Control Board Order Number 99-08-DWQ, General Permit Number CAS000002. Site drainage during construction would follow pre-development flow patterns, with ultimate discharge to Dunaway Road at the northeastern property boundary. Low-flow culverts consisting of a small diameter storm drain with a perforated stem pipe would be installed for sediment control and to provide for storm peak attenuation.

Facility Operation and Maintenance

The SES Solar Two Project would be an “as-available” resource. Therefore, the project would operate anywhere between a minimum of approximately 18 MW net when the first units are interconnected to the grid during the construction period to 750 MW on completion of construction. The capability for independent operation of all 30,000 units

would give maximum flexibility in operations. The SES Solar Two Project is expected to have an annual availability of 99%.

The SES Solar Two Project would operate approximately 3,500 hours annually. The number of available operating hours would depend on the availability of the sun's energy at greater than 250 watts per square meter. SunCatchers would be unable to generate electricity when the sun's energy is below 250 watts per square meter in the early morning or late evening hours and when cloud cover limits the sun's energy for power generation. Also, SunCatchers would be unable to generate electricity during daylight hours when the wind speed exceeds 35 miles per hour (mph), as SunCatchers would be stowed in a safe de-track position at and above this wind speed to prevent damage. It is expected that the SES Solar Two Project would be operated with a staff of approximately 164 full-time employees. The project would operate 7 days per week, generating electricity during daylight hours when solar energy is available. Maintenance activities would occur 7 days a week, 24 hours a day to ensure SunCatcher availability when solar energy is available. Maintenance activities would include SunCatcher mirror washing. The daily average water requirement for SunCatcher mirror washing under regular maintenance routines would be approximately 10.4 gal of raw water per minute.

Waste Management

Wastewater generated at the Main Services Complex would be discharged into a septic system with sanitary leach fields, and would be designed in accordance with applicable Laws, Ordinances, Regulations, and Standards (LORS), including those of the County, the RWQCB, and the California Department of Health Services. Disposal of clear liquids would be conveyed to on-site sanitary leach fields, and sewer sludge would be pumped and disposed of by trucks to an approved offsite disposal facility.

Solid waste from the SES Solar Two Project water treatment system would be trucked to an appropriate off-site landfill from evaporation ponds as a non-hazardous, low-moisture cake. An estimated 60,000 pounds (lbs) per year of salt cake would be trucked off-site to an appropriate landfill or recycled. The full 60,000 lbs would be scheduled for removal at the end of the evaporation process. Approximately 1.5 loads would be required per year.

Non-hazardous wastes generated during construction and operation includes scrap wood, concrete, steel/metal, paper, glass, scrap metals and plastic waste. All non-hazardous wastes would be recycled to the extent possible and non-recyclable wastes would be collected by a licensed hauler and disposed in a Class III solid waste disposal facility. Hazardous wastes would be recycled to the extent possible and disposed in either a Class I or II waste facility as appropriate. All operational wastes produced at SES Solar Two would be properly collected, treated (if necessary), and disposed of at either a Class I or II waste facility as appropriate.

Hazardous materials used during facility construction and operations would include paints, epoxies, grease, transformer oil, and caustic electrolytes (battery fluid). Several methods would be used to properly manage and dispose of hazardous materials and wastes. A Hazardous Materials Management Program (HMMP) would be developed and implemented during the project construction and operation phases. At a minimum, the HMMP would include procedures for hazardous materials handling, use and

storage; emergency response; spill control and prevention; employee training; and recordkeeping and reporting.

Project Decommissioning

Project closure can be temporary or permanent. Temporary closure is defined as a shutdown for a period exceeding the time required for normal maintenance, including closure for overhaul or replacement of the major components, such as major transformers, switchgear, etc. Causes for temporary closure include inclement weather and/or natural hazards (e.g., winds in excess of 35 mph, or cloudy conditions limiting solar insolation values to below the minimum solar insolation required for positive power generation, etc.), or damage to the project from earthquake, fire, storm, or other natural acts. Permanent closure is defined as a cessation in operations with no intent to restart operations owing to project age, damage to the project that is beyond repair, adverse economic conditions, or other significant reasons.

In the unforeseen event that the SES Solar Two Project is temporarily closed, a contingency plan for the temporary cessation of operations would be implemented. The contingency plan would be followed to ensure conformance with applicable LORS and to protect public health, safety, and the environment. The plan, depending on the expected duration of the shutdown, may include the draining of chemicals from storage tanks and other equipment and the safe shutdown of equipment.

The planned life of the SES Solar Two Project is 40 years; however, if the SES Solar Two Project is still economically viable, it could be operated longer. It is also possible that the SES Solar Two Project could become economically noncompetitive before 40 years have passed, resulting in early decommissioning. When the SES Solar Two Project is permanently closed, all the project equipment, facilities, structures and appurtenant facilities must be removed from the site. Because the conditions that would affect the decommissioning decision are largely unknown at this time, these conditions would be presented to the Energy Commission, the BLM, and other applicable agencies in a detailed decommissioning plan prior to the planned permanent decommissioning.

ALTERNATIVES

In addition to the proposed SES Solar Two Project, three other Build Alternatives on the same general site and three No Project/No Action Alternatives are also evaluated in detail in this environmental document. Executive Summary Table -1 summarizes the acreages and MW production of the build alternatives and Executive Summary Table -2 describes the three No Project/No Action Alternatives. The three build alternatives are a 300 MW alternative, and two alternatives that would reduce effects to waters of the United States (Drainage Avoidance Alternatives 1 and 2). The No Project/No Action Alternatives all consider not approving the SES Solar Two Project and either amending or not amending the California Desert Conservation Plan (CDCA) regarding land use designations for the site.

Executive Summary Table 1 - Summary of the Build Alternatives

Build Alternative	Number of Megawatts	Number of Acres (approx.)	Number of SunCatchers
SES Solar Two Project	750	6,500	30,000
300 MW Alternative: proposes construction and operation of a 300 MW facility using the SunCatcher technology. On and off site facilities would be similar to the Solar Two Project, except supporting 300 MW of a generation capacity instead of 750 MW.	300	2,600	12,000
Drainage Avoidance #1: This Alternative was developed to reduce impacts to waters of the U.S. on the project site. It would prohibit permanent impacts within the 10 primary drainages on the project site. This alternative would have the same site boundary and SunCatcher technology as the Solar Two Project.	632	4,690 (reduced from 6,500 because it prohibits installation of SunCatchers in 10 primary drainages)	25,000
Drainage Avoidance #2: This Alternative 2 would remove the easternmost and westernmost parts of the project site from development. These areas are where the largest drainage complexes are located. In this alternative, permanent structures would be allowed within all drainages inside the reduced site boundaries.	423	3,153 (reduced from 6,500 because it prohibits installation of SunCatchers in eastern and western parts of the site)	16,915

Executive Summary Table 2 - No Project/No Action Alternatives

No Project/No Action Alternative	SES Solar Two Project?	Amendment to the CDCA Plan?
No Approval of the SES Solar Two Project and no CDCA Plan Amendment	SES Solar Two not approved: no solar energy power generation project would be constructed on the project site	No CDCA Plan Amendment: BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan for the site
No Approval of the SES Solar Two Project and Amendment of the CDCA Plan to Allow Solar Energy Power Generation Projects on the Project Site	SES Solar Two not approved: solar energy power generation projects could be constructed on the site (as a result of the CDCA Plan amendment)	Yes: BLM would amend Uthe CDCA Plan to allow for solar energy power generation projects on the site
No Approval of the SES Solar Two Project and BLM Amends the CDCA Plan to Not Allow Any Solar Energy Power Generation Projects on the Project Site	SES Solar Two not approved: no solar energy power generation projects could be constructed on the site (as a result of the CDCA Plan amendment)	Yes: BLM would amend the CDCA Plan to not allow any solar energy power generation projects on the project site

COMPARISON OF THE ALTERNATIVES

Executive Summary Table 3 describes the ability of the SES Solar Two Project, the three build alternatives, and the three No Project/No Action Alternatives to meet the defined project purpose and objectives.

Executive Summary Table 3 - ALTERNATIVES TABLE
Ability of the Alternatives to Meet the Project Purpose and Objectives and Site Criteria

Project Purpose and Objectives	SES Solar Two Project	300 MW Alternative	Drainage Avoidance Alternative #1	Drainage Avoidance Alternative #2	No Approval of the Solar Two Project and no CDCA Plan Amendment	No Approval of the SES Solar Two Project and Amendment of the CDCA Plan to Allow Solar Energy Power Generation Projects on the Project Site	No Approval of the Solar Two Project and BLM Amends the CDCA Plan to Not Allow Any Solar Energy Power Generation Projects on the Project Site
To provide clean, renewable, solar-powered electricity and to assist San Diego Gas & Electric (SDG&E) in meeting its obligations under California's Renewable Portfolio Standard Program (RPS)	Yes	Yes	Yes	Yes	No	Potentially	No
To assist SDG&E in reducing its greenhouse gas emissions as required by the California Global Warming Solutions Act	Yes	Yes	Yes	Yes	No	Potentially	No
Provide up to 750 MW of renewable electric capacity under a 20-year PPA to SDG&E	Yes	No	No	No	No	Potentially	No
Contribute to the 20% renewables RPS target set by California's governor and legislature	Yes	Yes	Yes	Yes	No	Potentially	No
Assist in reducing greenhouse gas emissions from the electricity sector	Yes	Yes	Yes	Yes	No	Potentially	No

Project Purpose and Objectives	SES Solar Two Project	300 MW Alternative	Drainage Avoidance Alternative #1	Drainage Avoidance Alternative #2	No Approval of the Solar Two Project and no CDCA Plan Amendment	No Approval of the SES Solar Two Project and Amendment of the CDCA Plan to Allow Solar Energy Power Generation Projects on the Project Site	No Approval of the Solar Two Project and BLM Amends the CDCA Plan to Not Allow An Solar Energy Power Generation Projects on the Project Site
Contribute to California's future electric power needs	Yes	Yes	Yes	Yes	No	Potentially	No
Assist the California Independent System Operator (CAISO) in meeting its strategic goals for the integration of renewable resources, as listed in its Five-Year Strategic Plan for 2008–2012 (CAISO 2007)	Yes	Yes	Yes	Yes	No	Potentially	No
To construct and operate a 750 MW renewable power generating facility in California capable of selling competitively priced renewable energy consistent with the needs of California utilities	Yes	No	No	No	No	Potentially	No
To locate the facility in areas of high solarity with ground slope of less than 5%	Yes	Yes	Yes	Yes	No	Potentially	No

PUBLIC AND AGENCY COORDINATION

The Energy Commission's CEQA-equivalent process and the BLM's NEPA process provide opportunities for the public and other agencies to participate and consult in the scoping of the environmental analysis, and in the evaluation of the technical analyses and conclusions of that analysis. The following subsections describe the status of these outreach efforts for the proposed SES Solar Two Project. These activities are also described in the *Final Scoping Report* (LSA Associates, Inc., September 2009).

AGENCY COORDINATION

The Energy Commission certification is in lieu of any permit required by state, regional, or local agencies and by federal agencies to the extent permitted by federal law (Public Resources Code, Section 25500). However, both the Energy Commission and BLM typically seek comments from and work closely with other regulatory agencies that administer LORS that may be applicable to a proposed project. The following paragraphs describe the agency coordination that has occurred through this joint SA/EIS process for the proposed SES Solar Two Project.

United States Army Corps of Engineers

The United States Army Corps of Engineers (USACE) has jurisdiction to protect water quality and wetland resources under Section 404 of the Clean Water Act. Under that authority, USACE reviews proposed projects to determine whether they may impact such resources, and/or be subject to the requirements for a Section 404 permit. Throughout the SA/DEIS process, the Energy Commission, BLM, and the Applicant have provided information to the USACE to assist them in making a determination regarding their jurisdiction and need for a Section 404 permit. In addition, the USACE has requested that it be included as a cooperating agency with the BLM on the NEPA EIS for the project.

United States Fish and Wildlife Service

The United States Fish and Wildlife Service (USFWS) has jurisdiction to protect threatened and endangered species under the federal Endangered Species Act (ESA). Formal consultation with the USFWS under Section 7 of the ESA is required for any federal action that may adversely affect a federally-listed species. The site is known to be occupied by FTHL. The FTHL is currently not listed as threatened or endangered, but is proposed for listing as threatened.

State Water Resources Control Board/Regional Water Quality Control Board

The Regional Water Quality Control Board (RWQCB) has the authority to protect surface water and groundwater. Throughout the SA/DEIS process, the Energy Commission, BLM, and the applicant have invited the RWQCB to participate in public scoping and workshops, and have provided information to assist the agency in evaluating the potential impacts and permitting requirements of the proposed project.

California Department of Fish and Game

The California Department of Fish and Game (CDFG) have the authority to protect water resources through regulation of modifications to streambeds, under Section 1602 of the Fish and Game Code. The Energy Commission, BLM, and the applicant have provided information to CDFG to assist in their determination of the impacts to streambeds, and identification of permit and mitigation requirements. CDFG also has the authority to regulate potential impacts to species that are protected under the California Endangered Species Act (CESA).

Imperial County

The SES Solar Two Project site occupies approximately 360 acres of private land under the jurisdiction of Imperial County (County). The Energy Commission and BLM provided opportunities during scoping for the County to provide input to the environmental technical studies for the project.

Public Coordination

The Energy Commission's CEQA-equivalent process and the BLM's NEPA process provide opportunities for public participation in the scoping of the environmental analysis, and in the evaluation of the technical analyses and conclusions of that analysis. For the Energy Commission, this outreach program is primarily facilitated by the Public Adviser's Office (PAO). As part of the coordination of the environmental review process required under the Energy Commission /BLM California Desert District MOU, the agencies have jointly held public meetings and workshops which accomplish the public coordination objectives of both agencies.

The PAO's public outreach is an integral part of the Energy Commission's AFC review process. The PAO reviewed information provided by the applicant and also conducted its own outreach efforts to identify and locate local elected and certain appointed officials, as well as "sensitive receptors" (including schools, community, cultural and health facilities and daycare and senior-care centers, as well as environmental and ethnic organizations). Those agencies and individuals that provided comments concerning the project have been considered in staff's analysis. This SA/DEIS provides agencies and the public with an opportunity to review the Energy Commission staff's analysis of the proposed project. Comments received on this SA/DEIS would be taken into consideration in preparing the subsequent project documents, including the Supplemental SA/Final EIS (SSA/FEIS).

The AFC, this SA/DEIS, and other project documents are located on the Energy Commission's website at http://www.energy.ca.gov/sitingcases/solartwo/index.html

STAFF'S ASSESSMENT

Each technical area section of this SA/DEIS contains a discussion of the project setting, impacts, and where appropriate, mitigation measures and conditions of certification. The SA/DEIS includes the staff's assessment of:

- the environmental setting of the proposal;

- impacts on public health and safety, and measures proposed to mitigate these impacts;
- environmental impacts, and measures proposed to mitigate these impacts;
- the engineering design of the proposed facility, and engineering measures proposed to ensure the project can be constructed and operated safely and reliably;
- project closure;
- project alternatives;
- compliance of the project with all applicable laws, ordinances, regulations and standards (LORS) during construction and operation;
- environmental justice for minority and low income populations, when appropriate; and
- proposed mitigation measures/conditions of certification.

SUMMARY OF PROJECT RELATED IMPACTS

Executive Summary Table 4 summarizes the potential short-term, long-term and cumulative adverse impacts of the proposed SES Solar Two Project, the anticipated mitigation and conditions of certification, and the level of significance of the impacts after mitigation, under CEQA.

Executive Summary Table 4
Summary of Potential Short-Term, Long-Term, and Cumulative Adverse Impacts

Environmental Parameter	Complies with Applicable LORS	Short and Long Term Adverse Impacts	Cumulative Adverse Impacts	Mitigation and Conditions of Certification	CEQA Level of Significance After Mitigation
Air Quality	Yes	No significant short term or long term adverse impacts with mitigation/ Conditions of Certification incorporated	No cumulative adverse impacts	**AQ-1** through **AQ-31 and AQ-SC1** through **AQ-SC7**	Less than significant
Biological Resources	Yes	No significant short term or long term adverse impacts with mitigation/ Conditions of Certification incorporated	No cumulative adverse impacts	**BIO-1** through **-17**	Unknown
Cultural Resources	Yes	To Be Provided	No cumulative adverse impacts	**CUL-1**	Less than significant
Facility Design	Yes	No significant short term or long term adverse impacts with mitigation/ Conditions of Certification incorporated	Not applicable	General Conditions	Less than significant

Environmental Parameter	Complies with Applicable LORS	Short and Long Term Adverse Impacts	Cumulative Adverse Impacts	Mitigation and Conditions of Certification	CEQA Level of Significance After Mitigation
Geology, Paleontology, and Minerals	Yes	No significant short term or long term adverse impacts with mitigation/ Conditions of Certification incorporated	No cumulative adverse impacts	**PAL-1** through -**7**. and **GEN-1, GEN-5,** and **CIVIL-1**	Less than significant
Hazardous Materials	Yes	No significant short term or long term adverse impacts with mitigation/ Conditions of Certification incorporated	No cumulative adverse impacts	**HAZ-1** through **-6**	Less than significant
Hydrology, Soils and Water Resources	Yes	No significant short term or long term adverse impacts with mitigation/ Conditions of Certification incorporated	No cumulative adverse impacts	**SOIL&WATER -1** through **-9**	Less than significant
Land Use and Recreation	**No**	Significant short term and long term adverse impacts reduced with mitigation/ Conditions of Certification incorporated	Could result in cumulative adverse impacts	**LAND-1** and **-2**	Less than significant
Noise	Yes	No significant short term or long term adverse impacts with mitigation/ Conditions of Certification incorporated	No cumulative adverse impacts	**NOISE-1** through **-6**	Less than significant
Public Health and Safety	Yes	No significant short term or long term adverse impacts with mitigation/ Conditions of Certification incorporated	No cumulative adverse impacts	None required	Less than significant

Environmental Parameter	Complies with Applicable LORS	Short and Long Term Adverse Impacts	Cumulative Adverse Impacts	Mitigation and Conditions of Certification	CEQA Level of Significance After Mitigation
Power Plant Efficiency	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Power Plant Reliability	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Socioeconomics and Environmental Justice	Yes	No significant short term or long term adverse impacts with mitigation/ Conditions of Certification incorporated	No cumulative adverse impacts	None required	Less than significant
Traffic and Transportation	Yes	No significant short term or long term adverse impacts with mitigation/ Conditions of Certification incorporated	No cumulative adverse impacts	**TRANS-1** through **-4**	Less than significant
Transmission Line Safety/ Nuisance	Yes	No significant short term or long term adverse impacts with mitigation/ Conditions of Certification incorporated	No cumulative adverse impacts		Less than significant
Transmission System Engineering	Yes	No significant short term or long term adverse impacts with mitigation/ Conditions of Certification incorporated	No cumulative adverse impacts		Less than significant
Visual Resources	**No**	Would result in significant short term (construction) and long term (operation) adverse impacts.	Could result in cumulative adverse impacts	**VIS-1** through **-7**	Significant and unavoidable

Environmental Parameter	Complies with Applicable LORS	Short and Long Term Adverse Impacts	Cumulative Adverse Impacts	Mitigation and Conditions of Certification	CEQA Level of Significance After Mitigation
Waste Management	Yes	No significant short term or long term adverse impacts with mitigation/ Conditions of Certification incorporated	No cumulative adverse impacts	**WASTE-1** through -**8**	Less than significant
Worker Safety and Fire Protection	Yes	No significant short term or long term adverse impacts with mitigation/ Conditions of Certification incorporated	No cumulative adverse impacts	**WORKER SAFETY -1** through **-6**	Less than significant

Air Quality

BLM and Energy Commission staff find that with the adoption of the mitigation and conditions of certification, the proposed SES Solar Two Project would comply with all applicable LORS, and would not result in significant adverse short and long term or cumulative air quality impacts under CEQA.

With respect to potential impacts on air quality, staff has made the following conclusions about the SES Solar Two Project:

- The project would not have the potential to exceed point source discharge (PSD) emission levels during direct source operation and the facility is not considered a major stationary source. However, without adequate fugitive dust mitigation, the project would have the potential to exceed the General Conformity PM10 applicability threshold during construction and operation and the NOx applicability threshold during construction, and could cause potential localized exceedance of the PM10 NAAQS during construction and operation. Conditions of Certification **AQ-SC1** through **AQ-SC5**, for construction, and **AQ-SC7**, for operation, would adequately mitigate these potentially substantial adverse project air quality impacts.
- The project would comply with applicable Imperial County Air Pollution Control District Rules and Regulations and staff recommends the inclusion of the District's final determination of compliance (FDOC) conditions as Conditions of Certification **AQ-1** through **AQ-31.**
- The project's construction activities would likely contribute to significant CEQA adverse PM10 and ozone impacts. Staff recommends **AQ-SC1** to **AQ-SC5** to mitigate those potential impacts.
- The project's operation would not cause new violations of any NO_2, SO_2, PM2.5 or CO ambient air quality standards. Therefore, the project-direct operational NOx, SOx, PM2.5 and CO emission impacts would not be significant under CEQA
- The project's direct and indirect, or secondary emissions contribution to existing violations of the ozone and PM10 ambient air quality standards are likely to be significant under CEQA if unmitigated. Therefore, staff recommends **AQ-SC6** to mitigate the onsite maintenance vehicle emissions and **AQ-SC7** to mitigate the operating fugitive dust emissions to ensure that the potential ozone and PM10 impacts are mitigated to below a level of significance under CEQA over the life of the project.
- The project would be consistent with the requirements of SB 1368 and the Emission Performance Standard for greenhouse gases.
- The project would be in compliance with air quality LORS.

Alternatives. The CEQA level of significance for the 300 MW Alternative would be the same as for the proposed project, with the same significance rationale, where if left unmitigated there is the potential for significant NOx and PM emission impacts under CEQA during the alternative project's construction and operation. The mitigation that would be proposed for the 300 MW Alternative would be the same as that proposed for

the proposed Solar Two Project (Staff Recommended Conditions **AQ-SC1** TO **AQ-SC8**).

The CEQA level of significance for the Drainage Avoidance #1 Alternative would be the same as for the proposed project, with the same significance rationale, where if left unmitigated there is the potential for significant NOx and PM emission impacts during the Alternative project's construction and operation. The mitigation that would be proposed for the Drainage Avoidance #1 Alternative would be the same as that proposed for the proposed project (staff recommended conditions **AQ-SC1** to **AQ-SC8**).

The CEQA level of significance for the Drainage Avoidance #2 Alternative would be the same as for the proposed project, with the same significance rationale, where if left unmitigated there is the potential for CEQA significant NOx and PM emission impacts during the alternative project's construction and operation. The mitigation that would be proposed for the Drainage Avoidance #2 Alternative would be the same as that proposed for the proposed project (staff recommended conditions **AQ-SC1** to **AQ-SC8**).

The results of the No Project / No Action Alternative would be the following:

- The impacts of the proposed project would not occur. However, the land on which the project is proposed would become available to other uses that are consistent with BLM's land use plan, including another renewable energy project.
- The benefits of the proposed project in reducing fossil fuel use and greenhouse gas emissions from gas-fired generation would not occur. Both State and Federal law support the increased use of renewable power generation.

Biological Resources

BLM and Energy Commission staff find that with the adoption of the mitigation and conditions of certification, the proposed SES Solar Two Project would comply with all applicable LORS, and would not result in significant adverse short and long term or cumulative impacts to biological resources under CEQA.

Overview of Vegetation/Wildlife Impacts: Much of the SES Solar Two Project plant site predominantly consists of Sonoran creosote bush scrub habitat including approximately 1,000 acres of disturbed habitat, and supports a diversity of mammals, birds, and reptiles, including some special status wildlife species, such as FTHL and burrowing owl. Grading on the plant site would not directly or indirectly impact sensitive plant communities or wetlands, but would directly impact some wildlife, and possibly special status plants. The removal of vegetation would result in the loss of cover, foraging, and breeding habitat. Construction of linear facilities also has potential for impacts to wildlife; transmission line construction south of Interstate 8 would impact approximately 92.8 acres of Sonoran creosote bush scrub, which provides habitat for FTHL. Construction of the 12-mile reclaimed water pipeline would occur within the disturbed road shoulder, but nevertheless has potential to impact special status species such as burrowing owl and FTHL. Potential direct and indirect construction impacts to vegetation and wildlife can be reduced to less than significant levels under CEQA with avoidance and minimization measures described in staff's proposed Conditions of Certification **BIO-1** through **BIO-8**.

Take of Listed Species: The project is not likely to result in adverse effects to federally list as threatened or endangered species. The only federally listed species observed on the site was Peninsular bighorn sheep, federally listed as endangered. Several Peninsular bighorn sheep were observed in March 2009 on the site. The occurrence of Peninsular bighorn sheep on the site is considered a transient occurrence. The site is several miles from designated critical habitat and does not provide any corridor to other habitat that would support Peninsular bighorn sheep. The FTHL is not currently listed as federally threatened or endangered. However, there is a proposal for listing of the FTHL. Potential take of FTHL and loss of habitat for these species would be fully mitigated with staff's proposed Conditions of Certification **BIO-9** through **BIO-11**. Staff's proposed Condition of Certification **BIO-10** requires compensatory mitigation for approximately 6,619.9 acres of habitat suitable for these listed species, as directed by the FTHL Rangewide Management Strategy (2003). The other two conditions require avoidance and minimization measures and compliance verification. It is currently unresolved as to the disposition of the FTHLs that are salvaged from construction activity other than to keep the lizards out of harm's way. The FTHL Interagency Coordinating Committee (ICC) would need to coordinate the disposition of the salvaged FTHL individuals. Possible outcomes of the salvaged FTHL may include relocation to several suitable FTHL habitats and/or conducting research, though this is currently unresolved. It is unknown when the FTHL ICC would come to a decision as to what course of action(s) would be taken with the salvaged lizards. Once the FTHL ICC determines what would be done to the salvaged FTHLs, the requirements would be incorporated into staff's proposed Condition of Certification **BIO-9**.

Avian Predation on FTHL: Construction and operation of the project could provide attractants in the form of new nesting sites, trash, and water, which draw unnaturally high numbers of FTHL predators such as the common raven, American kestrel, and loggerhead shrike. Increased avian predation could contribute to the cumulative CEQA significant impacts to the FTHL. Staff's proposed Condition of Certification **BIO-12** specifies that the applicant finalize their draft Raven Management and Monitoring Plan in consultation with staff, BLM, CDFG, and USFWS. Staff anticipates that the applicant would be able to produce a final plan well before licensing, and that implementation of the condition would reduce this impact to less than significant levels under CEQA.

Migratory Birds/Burrowing Mammals: Vegetation at the plant site and along linear facilities provides foraging, cover, and/or breeding habitat for migratory birds, including a number of special status bird species confirmed to be present at the site (western burrowing owl, loggerhead shrike, LeConte's thrasher, and California horned lark). Migratory birds and their eggs and young are protected by the federal Migratory Bird Treaty Act and Fish and Game Code section 3503. Staff's proposed Conditions of Certification **BIO-8** (Impact Avoidance and Minimization Measures) and **BIO-14** (Pre-construction Nest Surveys and Impact Avoidance Measures) would avoid these potentially significant impacts to nesting birds under CEQA. Potential impacts to burrowing owls would be further mitigated under CEQA by implementation of staff's proposed Condition of Certification **BIO-16**. This condition would require active relocation of burrowing owls in the path of construction. Implementation of BIO-8, BIO-14, and BIO-16 wound ensure compliance with the MBTA.

American badgers were not detected during the surveys, but potential habitat is present for this species at the project site. Construction activities could also crush or entomb American badger, which are protected under Title 14, California Code of Regulations (sections 670.2 and 670.5). Staff's proposed Condition of Certification **BIO-15**, which requires preconstruction surveys and avoidance measures to protect badgers and kit fox, would avoid this potential impact. This condition also protects desert kit fox, which are known to occur on the site, and which are protected under the California Code of Regulations Chapter 5 Section 460.

Special Status Plants: Though no special status plants were observed during surveys, the surveys were deemed to be inadequate by staff. Federally threatened or endangered plant species are not expected to occur onsite. Four special status plant species were not included in targeted surveys. Staff and BLM are concerned that special status plant species may have been overlooked due to half the surveys conducted concurrently with FTHL surveys with biologists of varying levels of botanical expertise and the lack of fall surveys after late summer/early fall monsoonal rains. Staff's proposed Conditions of Certification **BIO-8** and **BIO-18** (Noxious Weed Management Plan) would minimize potentially significant impacts under CEQA to special status plants. Potential impacts to special status plants would be further mitigated by staff's proposed Condition of Certification **BIO-19** (Special Status Plant Surveys and Protection Plan). This condition requires targeted surveys during the appropriate seasons in 2010 and a protection plan for special status species.

Threat to Migratory Birds from Evaporation Ponds: The SES Solar Two Project includes two evaporation ponds totaling 2 acres in area. Staff and CDFG are concerned that the proposed ponds could attract avian predators, which in turn prey on the FTHL, and could also harm waterfowl, shorebirds, and other resident or migratory birds due to hyper-saline conditions. The applicant has addressed these concerns by proposing quarterly monitoring of the evaporation pond water. If toxicity effects on wildlife become apparent, several project design features for the evaporation ponds such as constructing perimeter fencing and installing covers to minimize wildlife access have been suggested. Staff has requested that the applicant develop a comprehensive draft Evaporation Pond Design, Monitoring and Management Plan, and to incorporate any revisions to pond size or design. Once the document is reviewed and approved by BLM, CDFG, USFWS, and staff, the plan would be incorporated into staff's proposed Condition of Certification **BIO-13**. This condition would reduce potential impacts of the evaporation ponds to less than significant levels under CEQA.

Impacts to CDFG Jurisdictional Streambeds and Waters of the U. S.: One of the significant biological impacts under CEQA of the project is the placement of SunCatchers and associated electrical collection system, hydrogen gas pipelines, debris basins, and access roads in ephemeral washes on the plant site, resulting in permanent loss of approximately 165 acres of Waters of the U. S. and 840 acres of CDFG jurisdictional streambeds. These washes are characterized by natural processes of soil deposition, channel formation, and development of microtopography and soil crusts, all of which support recruitment of native desert wash vegetation and provide wildlife habitat and a corridor for movement. Placement of the SunCatchers, access roads, road culverts, and debris/sediment basins within the beds of the ephemeral washes would disrupt the hydrological and biological functions and processes. The

CDFG is agreeable to mitigation to impacts to the ephemeral washes at a 1:1 compensation ratio of ephemeral wash within acquired Sonoran creosote scrub habitat independent of acquired FTHL compensation land. Staff concurs with the CDFG requiring 1:1 compensation ratio for impacts to the ephemeral washes on the project site. With implementation of staff's proposed Condition of Certification **BIO-17**, staff anticipates that impacts to 840 acres of CDFG jurisdictional streambeds and loss of the hydrological and biological functions of the project site desert washes would be mitigated to less than significant levels under CEQA. the USACE has indicated that a minimum of 2:1 mitigation ratio with half the mitigation from preservation and the other half from enhancement or restoration would be required to offset impacts from fill of Water of the U.S. Fill of Waters of the U. S. would require authorization by the USACE pursuant to Section 404 of the federal Clean Water Act (CWA) under an Individual Permit subject to CWA Section 404(b) (1) guidelines. Staff is awaiting the results of the federal CWA 404(1) (b) Alternatives Analysis and the conditions that would be included in the CDFG Lake and Streambed Alteration Agreement and CWA Section 404 Authorization. Once the conditions required by both agencies are known, the requirements would be incorporated into staff's proposed Condition of Certification **BIO-17**.

As there is currently no avoidance of aquatic resources for waters of the U.S. under USACE jurisdiction in the proposed project, for purposes of analysis pursuant to CWA Section 404(b) (1) guidelines, the USACE has proposed two alternatives which avoid different aspects of the ephemeral washes on the project site. These alternatives are: 1) Drainage Avoidance #1, which prohibits permanent impacts within the ten primary ephemeral washes; or 2) Drainage Avoidance #2, which eliminates the eastern and westernmost portions of the project site where the largest ephemeral drainage complexes are located.

For the proposed reclaimed water line alignment along Evan Hewes Highway, an estimated 2.33 acres each for Waters of the U. S. and CDFG jurisdictional streambeds has been calculated. The proposed reclaimed water line would either span or go under seven irrigation canals and the New River. It is anticipated that best management practices would be utilized to avoid impacts to Waters of the U. S. and CDFG jurisdictional streambeds for the proposed reclaimed water line, but this remains unresolved and proposed impacts have not been calculated.

With implementation of staff's proposed conditions of certification, staff is still uncertain if construction and operation of the proposed SES Solar Two Project would comply with all federal, state, and local LORS relating to biological resources. Staff recommends adoption of the Conditions of Certification to mitigate potential impacts for most sensitive biological resources to less than significant levels under CEQA with the exception of impacts to Waters of the U. S. Pending a LEDPA determination and requisite compensatory mitigation measures by the USACE, Staff is unable to determine whether the project would comply with Section 404 or 401 of the Clean Water Act, nor with related sections of the California Water Code.

Due to the lack of information regarding mitigation for Waters of the U.S., it is unknown if impacts from the proposed SES Solar Two Project to biological resources would be mitigated to less than significant levels under CEQA. Similarly for purposes of NEPA

compliance, it is unknown if the proposed SES Solar Two Project would not result in adverse impacts to biological resources due to the lack of information regarding impacts to and mitigation for Waters of the U.S.

Alternatives. Similar to the proposed project, staff is still uncertain if compliance with LORS and the implementation of staff's proposed conditions of certification to be sufficient to mitigate potential impacts to biological resources, specifically to Waters of the U. S. and CDFG jurisdictional state waters to less than significant levels associated with the 300 MW Alternative 1 under CEQA.

Staff considers project compliance with LORS and staff's proposed conditions of certification for the proposed project to be sufficient to mitigate the potential impacts to biological resources of the Drainage Avoidance #1 Alternative to less than significant levels under CEQA, if conditions required by the USACE for a federal Clean Water Act 404(1)(b) Impact Analysis and CDFG Lake and Streambed Alternative Agreement are incorporated into staff's proposed Condition of Certification **BIO-17**.

Staff considers project compliance with LORS and staff's proposed conditions of certification for the proposed project to be sufficient to mitigate the potential impacts to biological resources of the Drainage Avoidance #2 alternative to less than significant levels under CEQA, if conditions required by the USACE for a federal Clean Water Act 404(1)(b) Impact Analysis and CDFG Lake and Streambed Alternative Agreement are incorporated into staff's proposed Condition of Certification **BIO-17**.

With the No Action Alternative, the impacts of the proposed project to biological resources, including FTHL and other special status plant and wildlife species, and ephemeral drainages would not occur. The No Action Alternative would not cause any significant impacts under CEQA to biological resources, so no mitigation or compensation for habitat loss would be required.

Cultural Resources

The SES Solar Two Project was originally developed as a nominal 900 MW project covering approximately 7,700 acres. During the initial review with the BLM, prior to the filing of the AFC with the Energy Commission, the BLM and applicant determined that the potential impact to cultural resources needed to be reduced. The applicant reduced the proposed project by 150 MW and approximately 1,200 acres to avoid culturally sensitive areas. The SES Solar Two Project under review in this SA/DEIS is a result of that avoidance of culturally sensitive areas.

The cultural resources analysis concluded that the SES Solar Two Project would have significant adverse effects under CEQA on a presently unknown subset of approximately 328 known prehistoric and historical surface archaeological resources and may have significant adverse effects under CEQA on an unknown number of buried archaeological deposits, many of which may be determined historically significant under the provisions of a proposed programmatic agreement currently under development as part of the BLM National Historic Preservation Act Section 106 consultation process. Absent adequate data to date, the Energy Commission and BLM are proposing to develop treatment measures that would be stipulated in a programmatic agreement that

would be executed by signatory parties prior to issuance of the Record of Decision (ROD).

Alternatives. Similar to the proposed project, staff is still uncertain of the potential impacts associated with the 300 MW Alternative. When resource evaluations have been completed, impacts will be assessed. The observation and identification of 30 cultural resources thus far, including prehistoric trails, as part of the 25% re-survey suggests extensive use of the project landform in the past. If impacts are deemed significant, mitigation measures would be stipulated and refined in a Programmatic Agreement negotiated among all consulting parties and executed by the BLM.

Similar to the proposed project, staff is still uncertain of the potential impacts associated with Drainage Avoidance Alternative #1. When resource evaluations have been completed, impacts will be assessed. The observation and identification of 74 cultural resources thus far as part of the 25% re-survey suggests extensive use of the project landform in the past. If impacts are deemed significant, mitigation measures would be stipulated and refined in a Programmatic Agreement negotiated among all consulting parties and executed by the BLM.

Similar to the proposed project, staff is still uncertain of the potential impacts associated with Drainage Avoidance Alternative #2. When resource evaluations have been completed, impacts will be assessed. The observation and identification of 37 cultural resources thus far as part of the 25% re-survey suggests extensive use of the project landform in the past. If impacts are deemed significant, mitigation measures would be stipulated and refined in a Programmatic Agreement negotiated among all consulting parties and executed by the BLM.

With the No Action Alternative, the impacts of the proposed project to cultural resources would not occur. The No Action Alternative would not cause any significant impacts under CEQA to biological resources, so no mitigation would be required.

Facility Design

The Energy Commission staff concludes that the design, construction, and decommissioning of the project and its linear facilities would likely comply with applicable engineering LORS. The proposed conditions of certification would ensure compliance with the applicable LORS:

Design review, plan checking, and field inspections would be performed by the CBO or other Energy Commission delegate. Staff would audit the CBO to ensure satisfactory performance.

Though future conditions that could affect decommissioning are largely unknown at this time, it can reasonably be concluded that if, the project owner submits a decommissioning plan as required in the **General Conditions** portion of this document prior to decommissioning, decommissioning procedures would comply with all applicable engineering LORS.

Energy Commission staff further recommends that:

1. The proposed conditions of certification be adopted to ensure that the project is designed and constructed in a manner that protects the public health and safety and complies with all applicable engineering LORS;
2. The project be designed and built to the 2007 CBC (or successor standards, if in effect when initial project engineering designs are submitted for review); and
3. The CBO reviews the final designs, checks plans, and performs field inspections during construction. Energy Commission staff shall audit and monitor the CBO to ensure satisfactory performance.

Alternatives. The Facility Design section does not address environmental impacts under either CEQA or NEPA. The same LORS and Conditions of Certification would also apply to each of the Project Alternatives. LORS would not apply to the three No Project Alternatives because the project would not be constructed.

Geology, Paleontology, and Minerals

BLM and Energy Commission staff find that with the adoption of the mitigation and conditions of certification, the proposed SES Solar Two Project would comply with all applicable LORS, and would not result in significant adverse short and long term or cumulative geologic, paleontological, and mineralogical impacts under CEQA.

The proposed SES Solar Two Project site is located in an active geologic area of the south-central Colorado Desert Geomorphic Province in south-central Imperial County in south-eastern California. Because of its geologic setting, the site could be subject to intense levels of earthquake-related ground shaking. The potential effects of strong ground shaking would be mitigated through structural designs required by the California Building Code (CBC 2007) and the project geotechnical report. The CBC (2007) requires that structures be designed to resist seismic stresses from ground acceleration and, to a lesser extent, liquefaction potential. A geotechnical investigation has been performed and presents standard engineering design recommendations for mitigation of seismic shaking and site soil conditions.

There are no known viable geologic or mineralogical resources at the proposed Solar Two site. Locally, paleontological resources have been documented within Quaternary alluvium, Colluvium, lakebed sediments, and sedimentary units of the Palm Spring formation, all of which underlie the site in the near surface. Potential project impacts to paleontological resources would be mitigated below a level of significance under CEQA through worker training and monitoring by qualified paleontologists, as required by Conditions of Certification, **PAL-1** through **PAL-7**.

Based on its independent research and review, Energy Commission staff believes that the potential is low for significant adverse impacts under CEQA to the proposed project from geologic hazards during its design life and to potential geologic, mineralogical, and paleontological resources from the construction, operation, and closure of the proposed project. It is staff's opinion that the SES Solar Two Project could be designed and constructed in accordance with all applicable LORS and in a manner that both protects environmental quality and assures public safety.

General conditions of certification with respect to engineering geology are proposed under Conditions of Certification **GEN-1, GEN-5, and CIVIL-1** in the **FACILITY DESIGN** section. It is staff's opinion that the likelihood of encountering paleontological resources is moderate at the plant site.

Alternatives. If the reduced acreage of the 300 MW Alternative were constructed, the CEQA Level of Significance, for geological, paleontological and mineral resources would amount to roughly 40% of the levels described for the proposed project. Potential impacts to paleontological resources would be reduced below a level of significance under CEQA through worker training and monitoring by qualified paleontologists, as required by Conditions of Certification, **PAL-1** through **PAL-7.** Based on its independent research and review, Energy Commission staff believes that the potential is low for significant adverse impacts under CEQA to the proposed project from geologic hazards during its design life and to potential geologic, mineralogical, and paleontological resources from the construction, operation, and closure of the proposed project.

Like the proposed SES Solar Two Project, the potential is low for significant adverse impacts to the Drainage Avoidance #1 Alternative from geologic hazards during its design life and to potential geologic, mineralogical, and paleontological resources from the construction, operation, and closure of the proposed project. It is staff's opinion that the alternative could be designed and constructed in accordance with all applicable laws, ordinances, regulations, and standards and in a manner that both protects environmental quality and assures public safety, to the extent practical.

Like the proposed Solar Two Project, the potential is low for CEQA significant adverse impacts to the Drainage Avoidance #2 Alternative from geologic hazards during its design life and to potential geologic, mineralogical, and paleontological resources from the construction, operation, and closure of the proposed project. It is staff's opinion that the alternative could be designed and constructed in accordance with all applicable laws, ordinances, regulations, and standards and in a manner that both protects environmental quality and assures public safety, to the extent practical.

With the No Project / No Action Alternative the impacts of the proposed project would not occur. However, the land on which the project is proposed would become available to other uses that are consistent with BLM's land use plan.

Hazardous Materials

The BLM and Energy Commission staff evaluation of the proposed SES Solar Two Project indicated that hazardous materials use, storage, and transportation as part of t the proposed Project would not present a significant adverse impact under CEQA on the public or environment. With adoption of the proposed conditions of certification, the proposed project would comply with all applicable LORS related to hazardous materials.

Staff proposes six conditions of certification related to hazardous materials. **HAZ-1** ensures that no hazardous materials would be used at the facility except as listed in the AFC, unless there is prior approval by the Energy Commission Compliance Project Manager (CPM). **HAZ-2** ensures that local emergency response services are notified of the amounts and locations of hazardous materials at the facility. **HAZ-3** requires the development of a Safety Management Plan that addresses the delivery of all liquid

hazardous materials during the construction, commissioning, and operation of the project would further reduce the risk of any accidental release not specifically addressed by the proposed spill prevention mitigation measures, and further prevent the mixing of incompatible materials that could result in the generation of toxic vapors. Site security during both the construction and operation phases is addressed in **HAZ-4** and **HAZ-5. HAZ-6** ensures that the applicant complies with all Federal LORS regarding use, management, spills, and reporting of hazardous materials on Federal lands.

Alternatives. Like the proposed project, the construction and operation of the 300 MW Alternative would be in compliance with all applicable LORS for both long-term and short-term project impacts in the area of hazardous materials management with the adoption of the proposed conditions of certification. The mitigation that would be proposed for the 300 MW Alternative would be the same as that proposed for the proposed project (staff recommended conditions **HAZ-1** to **HAZ-6**).

Like the proposed project, the construction and operation of the Drainage Avoidance #1 Alternative would be in compliance with all applicable LORS for both long-term and short-term project impacts in the area of hazardous materials management with the adoption of the proposed conditions of certification. The mitigation that would be proposed for the Drainage Avoidance #1 Alternative would be the same as that proposed for the proposed project (staff recommended conditions **HAZ-1** to **HAZ-6**).

Like the proposed project, the construction and operation of the Drainage Avoidance #2 alternative would be in compliance with all applicable LORS for both long-term and short-term project impacts in the area of hazardous materials management with the adoption of the proposed conditions of certification. The mitigation that would be proposed for the Drainage Avoidance #1 Alternative would be the same as that proposed for the proposed project (staff recommended conditions **HAZ-1** to **HAZ-6**).

As the use of hazardous materials at the proposed project would have no CEQA significant impacts off-site, there would be no significant impact on the public resulting from their use under CEQA. Thus, the No Project/No Action alternative would not avoid or lessen any significant impacts compared to the proposed project under CEQA.

Hydrology, Soils and Water

Energy Commission staff has determined that construction, operation, and decommissioning of the proposed SES Solar Two Project could potentially impact soils, surface water, flooding, surface water quality, ground water quality, and water supply. Where these potential impacts have been identified, staff has proposed mitigation measures to reduce those impacts to below a level of significance under CEQA. With the possible exception of Sections 404 and 401 of the Clean Water Act, and related California water quality regulations, the project would conform to all applicable LORS. Staff's conclusions related to hydrology, soils, and water is:

1. The project would place more than 5,000 SunCatchers within areas known to be subject to flash flooding and erosion. Project-related changes to the braided and alluvial fan stream hydraulic conditions could result in on-site erosion, stream bed degradation or aggradation, and erosion and sediment deposition impacts to adjacent land. SunCatchers within the floodplain could be subject to destabilization

by stream scour. Impacts to soils related to wind erosion and runoff-borne erosion are potentially significant under CEQA, as are impacts to surface water quality from sedimentation and the introduction of foreign materials, including potential contaminants, to the project area.

2. Based on the project hydrologic study and hydraulic modeling of the major stream channels on the project site, scour analyses indicate the project can be designed to withstand flash flood flows with minimal damage to the SunCatchers. Condition of Certification **SOIL&WATER-6** ensures no significant impact under CEQA to SunCatchers placed in the floodplain.

3. A Drainage, Erosion, and Sedimentation Control Plan (DESCP) would mitigate the potential storm water and sediment project-related impacts. Based on an independent preliminary assessment, staff has determined the proposed project could result in erosion and stream morphology impacts that would be significant under CEQA. Conditions of Certification **SOIL&WATER-1, SOIL&WATER-5,** and **SOIL&WATER-6** require development of best management practices and monitoring and reporting procedures to mitigate impacts related to flooding, erosion, sedimentation, and stream morphological changes. These conditions of certification would minimize impacts, but due to the uncertainty associated with the existing analysis, impacts related to erosion, sedimentation and stream morphological changes are considered to be significant after mitigation under CEQA.

4. Surface water and ground water quality could be affected by construction activities, ongoing operations activities including mirror washing, vehicle use and fueling , storage of oils and chemicals, the proposed septic and leach field system for sanitary wastes, and wastes from the water treatment system. These impacts are potentially significant under CEQA. Compliance with LORS and Conditions of Certification **SOIL&WATER-1, SOIL&WATER-3, SOIL&WATER-5, SOIL&WATER -6, SOIL&WATER -7** and **SOIL&WATER-8** would mitigate those impacts to below a level of significance under CEQA in all areas except those associated with the sediment content of water related to stream morphological changes. Uncertainty regarding sediment content of runoff water results in a conclusion of potential significant adverse water quality impacts under CEQA.

5. The USACE has determined that 878 acres of the project site are jurisdictional waters of the U.S. under CWA Section 404, including 165 acres that would be subject to permanent impacts. The USACE has not yet completed a determination of the Least Environmentally Damaging Practicable Alternative (LEDPA) pursuant to CWA Section 404(b)(1) guidelines. Pending a LEDPA determination and requisite compensatory mitigation measures by the USACE, Staff is unable to determine whether the project would comply with Section 404 or 401 of the Clean Water Act, nor with related sections of the California Water Code.

6. SunCatcher mirrors would be washed on a regular basis. Mirror washing and dust control watering would comprise the primary water use for the project, which is estimated at 33,550 gallons per day (gpd), with total annual use approximately 32.7 acre feet. The applicant proposes to upgrade the Seeley Waste Water Treatment Plant (SWWTP), approximately 12 miles east of the site, to provide up to 200,000

gpd of reclaimed water for project use. That reclaimed water would be treated on the project site for use in mirror washing. By using SWWTP water, the project would comply with State policies regarding the use of recycled water for power plants where practicable. Potable water would be supplied to the site by truck. Conditions of Certification **SOIL&WATER -2**, **SOIL&WATER-3**, **SOIL&WATER-7** and **SOIL&WATER-9** are proposed by staff to ensure adequate water supply and that the water supply and treatment system comply with LORS and not create adverse water quality or supply impacts.

7. Impacts to groundwater supply and quality would be less than significant under CEQA. No groundwater would be used by the project and the effect on groundwater infiltration would be negligible.

Alternatives. The 300 MW Alternative has the same impacts as the proposed project, but reduced by approximately 60% due to smaller project size. Soil erosion impacts by water would potentially be significant and adverse under CEQA, but reduced in magnitude in comparison to the proposed project. All other impacts would be mitigated to a level less than significant under CEQA.

Drainage Avoidance #1 Alternative avoids CEQA significant adverse soil erosion impacts related to stream morphology and sediment transport. All other impacts are the same as for the proposed project, but reduced slightly due to smaller project size. With compliance with LORS and compliance with Conditions of Certification, Drainage Avoidance #1 Alternative has no significant adverse impacts under CEQA.

Drainage Avoidance #2 Alternative has the same impacts as the proposed project, but reduced by approximately 68% due to smaller project size. Soil erosion impacts by water would be significant and adverse under CEQA, but reduced in magnitude in comparison to the proposed project. All other impacts would be mitigated to a level less than significant under CEQA.

Under the No Project/No Action Alternative the impacts of the proposed project would not occur. However, the land on which the project is proposed would become available to other uses that are consistent with BLM's land use plan, including another renewable energy projects.

Land Use and Recreation

The proposed SES Solar Two Project would not result in adverse impacts to agricultural or rangeland resources. The conversion of approximately 6,500 acres of land for the project to support the proposed project's components and activities would directly disrupt current recreational activities in established federal, state, and local recreation areas and would result in adverse effects on recreational users of these lands. Condition of Certification/Mitigation Measure **LAND-1** is proposed to help reduce these adverse effects on recreational users. Further, with implementation of staff's proposed Condition of Certification/Mitigation Measure **LAND-2**, the proposed project would be consistent with the applicable LORS pertaining to the Subdivision Map Act.

The applicant has submitted an application to the BLM requesting a right-of-way (ROW) grant to construct the proposed project and its related facilities. Pursuant to the

California Desert Conservation Area (CDCA) Plan (1980, as amended), sites associated with power generation or transmission not identified in the CDCA Plan are considered through the Plan Amendment process. Because the proposed project is not currently identified in the CDCA Plan, the proposed project would require a BLM ROW grant and a project-specific CDCA Plan Amendment.

For purposes of CEQA compliance, the level of significance of each impact of the proposed project on land use resources has been determined and is discussed in detail in Section C.8.4.3 (CEQA Level of Significance). In summary, impacts on agricultural lands and rangelands would be less-than-significant under CEQA, and there would be no impacts related to Williamson Act contracts. Impacts to recreation and wilderness resources would be less-than-significant under CEQA with implementation of Condition of Certification/Mitigation Measure **LAND-1**. Impacts to horses and burros would be less-than-significant under CEQA. LORS compliance impact would be less-than-significant under CEQA with implementation of Condition of Certification/Mitigation Measure **LAND-2**.

Alternative 1 to the proposed project would construct and operate a 300 MW facility using the Stirling SunCatcher technology and requiring 2,600 acres of land. Condition of Certification/Mitigation Measure **LAND-1** would reduce impacts below a level of significance under CEQA to recreationists in the project area.

Also included is the analysis of two alternatives that were developed to reduce impacts to the U.S. Army Corps of Engineer's primary waters within the project site. As a result, Drainage Avoidance 1 Alternative would prohibit permanent impacts within the 10 primary drainages within the proposed project boundaries; and Drainage Avoidance #2 Alternative would eliminate both the eastern and westernmost portions of the proposed project, where the largest drainage complexes are located. In general, the impacts associated with these alternatives would be the same as the proposed project, and Conditions of Certification/Mitigation Measures **LAND-1** and **LAND-2** would be required to mitigate project impacts to recreational users below a level of significance under CEQA.

Approximately one million acres of land are proposed for solar and wind energy development in the southern California desert lands. Cumulative impacts to approximately one million acres of land would all combine to result in adverse effects on agricultural lands and recreational resources. The cumulative conversion of these lands would preclude numerous existing land uses including recreation, wilderness, rangeland, and open space, and therefore, result in a significant and unavoidable cumulative impact related to land use under CEQA.

- No farmland conversion impacts are expected as a result of linear facilities' construction, and the proposed project would not involve other changes in the existing environment which could result in conversion of farmland, to non-agricultural uses.
- No conversion of rangelands would occur, and they would not be adversely affected by construction or operation of the proposed project.
- The conversion of 6,500 acres of land to support the proposed project's components and activities would directly disrupt current recreational activities in established

federal, state, and local recreation areas and would result in adverse effects on recreational users of these lands. Condition of Certification/Mitigation Measure **LAND-1** is proposed to reduce these adverse effects on recreational users below a level of significance under CEQA.

- The Yuha ACEC and Jacumba Wilderness surrounding the project site attract visitors based on their scenic, biological, cultural, and recreational amenities. The proposed project would impact the recreational and wilderness values of these areas. However, due to the abundance of wilderness and recreation sites throughout the county, the proposed project would impact a small fraction of these land uses.
- The proposed project would not contain or traverse any established BLM HAs or HMAs, and the HMA and HA are approximately 58 miles east side of the proposed project site. In addition, following construction, fencing around the site would keep any burros outside of the proposed project location. Therefore, the proposed project would not result in any interference with BLM's management of an HMA or HA.
- The proposed project would not disrupt or divide the physical arrangement of an established community.
- The applicant has submitted an application to the BLM requesting a right-of-way (ROW) to construct the proposed project and its related facilities. Pursuant to the California Desert Conservation Area (CDCA) Plan (1980, as amended), sites associated with power generation or transmission not identified in the CDCA Plan are considered through the Plan Amendment process. Under Federal law, BLM is responsible for processing requests for ROWs to authorize such proposed projects and associated transmission lines and other appurtenant facilities on land it manages. If the ROW and proposed land use plan amendment are approved by BLM, the proposed solar thermal power plant facility on public lands would be authorized in accordance with Title V of the FLMPA of 1976 and the Federal Regulations at 43 CFR part 2800.
- Based on staff's independent review of applicable federal, state, and local LORS documents, the proposed project would be consistent with applicable land use LORS.
- With implementation of staff's proposed Conditions of Certification **LAND-2,** the proposed project would be consistent with the applicable LORS pertaining to the Subdivision Map Act.
- For purposes of CEQA compliance, the level of significance of each impact of the proposed project on land use resources has been determined and is discussed in detail in Section C.8.4.3 (CEQA Level of Significance). In summary, impacts on agricultural lands would be less-than-significant under CEQA, and there would be no impacts related to Williamson Act contracts. Impacts to recreation resources would be less-than-significant under CEQA with implementation of Condition of Certification/Mitigation Measure **LAND-1.** No impacts to horses and burros are anticipated and therefore impacts to horses and burros would be less-than-significant under CEQA. LORS compliance impact would be less-than-significant under CEQA with implementation of Condition of Certification/Mitigation Measure **LAND-2.**

- Cumulative impacts to approximately one million acres of land in the southern California desert would all combine to result in adverse effects on agricultural lands and recreational resources and would result in a significant and unavoidable impact under CEQA In consideration of cumulative land use compatibility impacts, the implementation of renewable projects in Southern California would occur mostly in undeveloped desert lands or areas of rural development, and therefore, would not create physical divisions of established residential communities. Approximately one million acres of land are proposed for solar and wind energy development in the Southern California desert lands. The conversion of these lands would preclude numerous existing land uses including recreation, wilderness, rangeland, and open space, and therefore, result in a significant cumulative impact under CEQA.
- The land use impacts associated with the alternatives would be similar to the proposed project. To mitigate impacts to land uses below the level of significance under CEQA, implementation of Condition of Certification/Mitigation Measure **LAND-1** would be required for impacts related to recreation resources for each alternative; and Condition of Certification/Mitigation Measure **LAND-2** would also be required with each alternative, with the exception of Alternative 1, which would be constructed on BLM land only.

If the Energy Commission and the BLM approve the proposed project, staff is proposing Conditions of Certification/Mitigation Measures **LAND-1** to ensure that the proposed project mitigates for the permanent loss of recreational lands, and **LAND-2** to ensure that the project is constructed and operated in accordance with the Subdivision Map Act.

Alternatives. Similar to the proposed project, impacts resulting form the 300 MW Alternative on Land Use would be less-than-significant under CEQA with implementation of Condition of Certification **LAND-1**. However, the cumulative land use effects, as discussed in subsection C.8.5.2, of this alternative would be significant and unavoidable under CEQA.

Impacts resulting from Drainage Avoidance #1 Alternative on land use would be less-than-significant under CEQA with implementation of Condition of Certification **LAND-1.** As discussed in subsection C.8.5.2, and similar to the proposed project, the cumulative impacts of this alternative would be significant and unavoidable under CEQA.

Impacts resulting from Drainage Avoidance #2 Alternative land use would be less-than-significant under CEQA with implementation of Condition of Certification **LAND-1.** As discussed in subsection C.8.5.2, and similar to the proposed project, the cumulative impacts of this alternative would be significant and unavoidable under CEQA.

Under the No Project/No Action alternative land use impacts to the proposed project site and area would be similar as those currently occurring under the existing conditions in the area. Given that there would be no substantial change over the existing conditions, the land use impacts of the No Project/No Action alternative would be less-than-significant under CEQA.

Noise

Energy Commission staff concludes that the SES Solar Two Project can be built and operated in compliance with all applicable noise and vibration LORS and, if built in accordance with the conditions of certification, **NOISE-1** through **NOISE-6**, would produce no significant adverse noise impacts under CEQA on people within the affected area, either direct, indirect, or cumulative.

Alternatives. Given the nature of the operational noise produced by the chosen project technology, the 300 MW Alternative would most likely correspond to lower operational noise impacts at noise receptors located east of the project. Operational noise impacts at those receptors west of the project would likely be the same as that of the proposed 750 MW project. Certainly, the noise impacts of the 300 MW Alternative would not be greater than the noise impacts from the proposed 750 MW project, which, as discussed are not significant under CEQA. Energy Commission staff concludes that because this alternative would result in fewer construction activities than the proposed project, the 300 MW Alternative can be built and operated in compliance with all applicable noise and vibration LORS. Also, if built in accordance with the conditions of certification proposed for the proposed project, it would produce no significant adverse noise impacts on people within the affected area, either direct, indirect, or cumulative under CEQA.

Like the proposed project, the Drainage Avoidance #1 Alternative, if built and operated in conformance with the proposed conditions of certification defined for the proposed project, would comply with all applicable noise and vibration LORS and would produce no significant adverse noise impacts on people within the project area, directly, indirectly, or cumulatively under CEQA.

The Drainage Avoidance #2 Alternative would result in fewer construction activities and at greater distances from sensitive receptors than the proposed project. Therefore, Energy Commission staff concludes that the Drainage Avoidance #2 alternative can be built and operated in compliance with all applicable noise and vibration LORS. Also, if built in accordance with the conditions of certification proposed for the proposed project, Drainage Avoidance #2 alternative would produce no significant adverse noise impacts on people within the affected area, either direct, indirect, or cumulative under CEQA.

For the No Project / No Action Alternatives, the noise impacts associated with the proposed project would not occur. However, the land on which the project is proposed would become available to other uses that are consistent with BLM's land use plan.

Power Plant Efficiency

The Energy Commission staff has analyzed the potential efficiency in energy out associated with construction and operation of the Solar Two Project. The project would decrease reliance on fossil fuel due to increased availability of renewable energy resources. It would not create significant adverse effects on fossil fuel energy supplies or resources under CEQA, would not require additional sources of energy supply, and would not consume fossil fuel energy in a wasteful of inefficient manner. No efficiency standards apply to this project. Energy Commission staff concludes that this project

would present no significant adverse impacts on fossil fuel energy resources under CEQA.

Alternatives. The CEQA Level of Significance of the 300 MW Alternative would be unchanged from the proposed project.

The Drainage Avoidance #1 Alternative would occupy 10.12 acres per MW of power output (compared with nearly nine acres per MW of power output for the proposed project). Like the proposed project, this figure is substantially greater than that of some other solar power technologies. Employing a less land-intensive solar technology would reduce these impacts by approximately 50 percent. Fossil fuel use efficiency of the Drainage Avoidance #1 alternative would be unchanged, that is, no impact. Land use efficiency of the alternative would be substantially reduced under this alternative, because power output would be reduced in comparison to occupied land (assuming that all land within the fence line is considered to be occupied or otherwise removed from public use).

The Drainage Avoidance #2 Alternative would occupy a smaller area than the proposed project, resulting in 7.45 acres per MW of power output (compared with nearly nine acres per MW of power output for the proposed project). Like the proposed project, this figure is substantially greater than that of some other solar power technologies. Employing a less land-intensive solar technology would reduce these impacts by approximately 50 percent. Fossil fuel use efficiency of the Drainage Avoidance #2 alternative would be unchanged, that is, no impact. Land use efficiency of the alternative under this alternative would be essentially the same as that of the proposed project because within project boundaries, all lands would be available for development.

In the No Project /No Action Alternative, the proposed action would not be undertaken. Therefore, the impacts of the proposed project would not occur. However, the land on which the project is proposed would become available to other uses that are consistent with BLM's land use plan, including another renewable energy project.

Power Plant Reliability

Staff cannot determine whether the applicant's availability goal is achievable and cannot predict what the actual availability might be, given the demonstration status of this Stirling engine and limited data on large-scaled deployments of Stirling engines. (The availability factor of a power plant is the percentage of time it is available to generate power; both planned and unplanned outages subtract from this availability.) Staff believes it possible that the project may face challenges from considerable maintenance demands, reducing its availability.

Alternatives. Like the proposed project, the 300 MW Alternative would require fewer SunCatcher groups to generate 300 MW (phase one) of the project. Therefore, this alternative would require fewer distribution and substation facilities to be built within the project site. Additionally, this alternative would not cause any reconductoring of the SDG&E transmission system. Since this alternative would require fewer distribution and transmission facilities to be built in the project site; this alternative causes fewer impacts to the environment and triggers less CEQA level analysis.

Like the proposed project, the Drainage #1 Alternative would include numerous groups of 60 SunCatchers, connected by underground electrical cables. When aggregated at the project substation, the power generated would interconnect to SDG&E's existing Imperial Valley 500/230 kV substation which is located southwest of El Centro, California. There would be fewer SunCatcher groups in this alternative, but the system of aggregation and power transmission would be the same as for the proposed project. Like the proposed project, the transmission system required for the Drainage Avoidance #1 alternative requires new components. While System Impact Studies have not been completed for the smaller generation capacity of this alternative, it is likely that the outlet lines and termination facilities are acceptable and would comply with all applicable LORS.

Like the proposed project and Drainage #1 Alternative, the Drainage #2 Alternative would include numerous groups of 60 SunCatchers, connected by underground electrical cables. There would be fewer SunCatcher groups in this alternative, but the system of aggregation and power transmission would be the same as for the proposed project. Like the proposed project, the transmission system required for the Drainage Avoidance #2 alternative requires new components. While System Impact Studies have not been completed for the smaller generation capacity of this alternative, it is likely that outlet lines and termination are acceptable and would comply with all applicable LORS.

In the No Project / No Action Alternative, the proposed action would not be undertaken and no solar generating or transmission facilities would be constructed on the project site or connecting to the existing transmission grid.

Public Health and Safety

The BLM and Energy Commission staff have analyzed potential public health and safety risks associated with construction and operation of the SES Solar Two Project and do not expect any substantial adverse cancer or short- or long-term noncancerous health effects from project toxic emissions under CEQA. Staff's analysis of potential health impacts from the proposed SES Solar Two Project uses a conservative health-protective methodology that accounts for impacts to the most sensitive individuals in a given population, including newborns and infants. According to the results of staff's health risk assessment, emissions from the SES Solar Two Project would not contribute substantially to morbidity or mortality in any age or ethnic group residing in the project area.

Alternatives. The types of construction and operational impacts of the 300 MW Alternative would be the same as those of the proposed project. The proposed project impacts are found to be less than significant under CEQA, and impacts of this alternative would be even smaller – although marginally so - due to the smaller extent of construction disturbance and the smaller number of SunCatchers of the alternative.

Like the proposed project, emissions from the Drainage Avoidance #1 Alternative would not contribute substantially to morbidity or mortality in any age or ethnic group residing in the project area. No construction or operational impacts are found to be significant under CEQA, and no mitigation measures (Conditions of Certification) are required.

Similar to the proposed project and Drainage Avoidance #1 Alternative, emissions from the Drainage Avoidance #2 Alternative would not contribute substantially to morbidity or mortality in any age or ethnic group residing in the project area. No construction or operational impacts are found to be significant under CEQA, and no mitigation measures (Conditions of Certification) are required.

Under the No Project/No Action alternative, public health impacts to the proposed project site and area would be similar as those currently occurring under the existing conditions in the area. Given that there would be no significant change over the existing conditions under CEQA, the public health impacts of the No Project/No Action alternative would be less-than-significant under CEQA.

Socioeconomics and Environmental Justice

Staff concludes that construction and operation of the SES Solar Two Project would not cause a significant direct, indirect, or cumulative adverse socioeconomic impact on the study area's housing, schools, parks and recreation, law enforcement, emergency services, or hospitals, under CEQA. Socioeconomic impacts of the SES Solar Two Project would not combine with impacts of any past, present, or reasonably foreseeable local projects to result in cumulatively considerable local impacts. Hence, there are no socioeconomic environmental justice issues related to this project. The SES Solar Two Project, as proposed, is consistent with applicable Socioeconomic LORS.

Estimated gross public benefits from the SES Solar Two Project include increases in sales, employment, and income in Imperial, Riverside, and San Diego counties during construction and operations. Taxes were also estimated. For example, there is an estimated average of 360 direct project-related construction jobs for the 40 months of construction. The Solar Two Project is estimated to have total project costs of $1.14 billion. The SES Solar Two Project local construction payroll is estimated to be $42.1 million annually, and the local operation payroll is $8,924,810 annually. If the California property tax exemption for solar systems is not renewed when it expires in 2015-2016 fiscal, then the project's property tax on private land (most of the project is on tax-exempt federal land) would be $840,750 annually. There is $35,250 in school impact fees. Total sales and use taxes during construction are estimated to be approximately $623,100 and during operation the local sales tax is estimated to be $387,500 annually. An estimated $2.41 million would be spent locally for materials and equipment during construction, and an additional $7.4 million would be spent annually for the project's local operations and maintenance budget.

Alternatives. Similar to the proposed project, no significant adverse impacts under CEQA would result from construction and operation of the 300 MW Alternative. The benefits of the project to the local economy would be somewhat reduced due to the smaller scale of the project.

No significant adverse impacts under CEQA would result from construction and operation of the Drainage Avoidance #1 Alternative, which is similar to the proposed project. The benefits of the project to the local economy would be somewhat reduced due to the smaller scale of the project.

Like the proposed project, no significant adverse impacts under CEQA would result from construction and operation of the Drainage Avoidance #2 Alternative. The benefits of the project to the local economy would be somewhat reduced due to the smaller scale of the project.

Under the No Project/No Action Alternative, the socioeconomic benefits of the proposed project site and area would be similar as those currently occurring under the existing conditions in the area. Given that there would be no substantial change over the existing conditions, impacts to socioeconomic resources of the No Project/No Action alternative would be less-than-significant under CEQA.

Traffic and Transportation

The SES Solar Two Project would be consistent with the Circulation and Scenic Highways Element of the County of Imperial General Plan and all other applicable LORS related to traffic and transportation. The SES Solar Two Project would not have a significant adverse impact under CEQA on the local and regional roadway network. During the construction and operation phases, local roadway and highway demand resulting from the daily movement of workers and materials would not increase beyond significance thresholds established by the County of Imperial or the State of California.

1. The SES Solar Two Project as proposed would comply with all applicable LORS related to traffic and transportation. It would result in less than significant impacts under CEQA to the traffic and transportation system.
2. Because of the SES Solar Two Project's distance from the nearest airport, no impact on the Emory Ranch Airport, Naval Air Facility El Centro or the Imperial County Airport would occur, and the project would not impact aviation safety.
3. The SES Solar Two Project as proposed would cause no significant direct or cumulative traffic and transportation impacts under CEQA, and therefore, no environmental justice issues.
4. Staff is proposing Condition of Certification **TRANS-1** which would require a construction traffic control plan to be developed and implemented prior to earth moving activities
5. Staff is proposing Condition of Certification **TRANS-2** which would require the applicant to provide the executed license agreement and subsequent approval of the physical improvements associated with the proposed railroad crossing.
6. Staff is proposing Condition of Certification **TRANS-3,** which would require mitigation plans for the roads that would be used for construction if they are damaged by project-related construction.
7. Staff is proposing Condition of Certification **TRANS-4** to address potential malfunctions in the mirror control, which could lead to glare impacts on motorists or pilots.

Alternatives. The 300 MW Alternative, if constructed with the same peak workforce as the proposed project, would result in the same levels of construction traffic and parking demand as the proposed project. However these conditions would occur for a shorter period of time given that the alternative would be approximately 40% of the size of the

proposed project. Like the proposed project, with implementation of recommended conditions of certification, impacts would remain less than significant under CEQA.

The Drainage Avoidance #1 Alternative, if constructed with the same peak workforce as the proposed project, would result in the same levels of construction traffic and parking demand as the proposed project. However these conditions would occur for a shorter period of time given that the alternative would be approximately 84% of the size of the proposed project. Like the proposed project, with implementation of recommended conditions of certification, traffic impacts associated with the Drainage Avoidance #1 Alternative would remain less than significant under CEQA.

The Drainage Avoidance #2 Alternative, if constructed with the same peak workforce as the proposed project, would result in the same levels of construction traffic and parking demand as the proposed project. However, these conditions would occur for a much shorter period of time given that the alternative would be approximately 50% of the size of the proposed project. Similar to the proposed project, with implementation of recommended conditions of certification, traffic impacts associated with the Drainage Avoidance #2 Alternative would remain less than significant under CEQA.

With the No Project/No Action Alternative, the proposed action would not be undertaken. Since no action would occur under the No Project/No Action Alternative, the transportation and traffic related impacts of the SES Solar Two Project would not occur at the proposed site.

Transmission Line Safety and Nuisance

The Applicant proposes to transmit the power from Phase I of the proposed SES Solar Two Project to the SDG&E transmission grid through a new, 10.3-mile double-circuit 230-kV transmission line constructed to run parallel to the existing Southwest Powerlink transmission line and connecting the project to the existing SDG&E Imperial Valley Substation to the southeast. Phase II would require SDG&E to build proposed 500-kV Sunrise Powerlink (or equivalent) transmission line (assumed be a project independent of the SES Solar Two Project). The construction and operation of Phase II is contingent on the approval and development of either the Sunrise Powerlink transmission line or additional transmission capacity in the SDG&E transmission system. This Phase II-related line would be under the jurisdiction of the California Public Utilities Commission (CPUC) and the BLM. Therefore, this staff analysis is for the Phase I-related 230-kV line. Since the Phases I and II lines would be located in the SDG&E service area, each would be constructed, operated, and maintained according to SDG&E's guidelines for line safety and field management which conform to applicable LORS. Each line would traverse undisturbed desert land with no nearby residents, thereby eliminating the potential for residential electric and magnetic field exposures. With the four proposed conditions of certification, any safety and nuisance impacts from the Phase I line the applicant proposes would be less than significant under CEQA.

Since staff does not expect the proposed 230-kV transmission line to pose an aviation hazard according to current FAA criteria, we do not consider it necessary to recommend location changes on the basis of a potential hazard to area aviation.

The potential for nuisance shocks would be minimized through grounding and other field-reducing measures that would be implemented in keeping with current SDG&E guidelines (reflecting standard industry practices). These field-reducing measures would maintain the generated fields within levels not associated with radio-frequency interference or audible noise.

The potential for hazardous shocks would be minimized through compliance with the height and clearance requirements of CPUC's General Order 95. Compliance with Title 14, California Code of Regulations, section 1250, would minimize fire hazards while the use of low-corona line design, together with appropriate corona-minimizing construction practices, would minimize the potential for corona noise and its related interference with radio-frequency communication in the area around the route.

Since electric or magnetic field health effects have neither been established nor ruled out for the proposed Solar Two Project and similar transmission lines, the potential public health significance of any related field exposures cannot be characterized with certainty under CEQA. The only conclusion to be reached with certainty is that the proposed line's design and operational plan would be adequate to ensure that the generated electric and magnetic fields are managed to an extent the CPUC considers appropriate in light of the available health effects information. The long-term, mostly residential magnetic exposure of health concern in recent years would be insignificant under CEQA for the proposed line given the absence of residences along the proposed route. On-site worker or public exposure would be short term and at levels expected for SDG&E lines of similar design and current-carrying capacity. Such exposure is well understood and has not been established as posing a substantial human health hazard.

Since the proposed project line would be operated to minimize the health, safety, and nuisance impacts of concern to staff and would be routed through an area with no nearby residences, staff considers the proposed design, maintenance, and construction plan as complying with the applicable LORS. With implementation of the four recommended conditions of certification, any such impacts would be less than significant under CEQA.

Alternatives. Since staff finds these safety and nuisance impacts to be less than significant under CEQA for the proposed 750 MW project, staff also expects them to be less than significant under CEQA for the smaller 300 MW alternative.

The transmission line for the Drainage Avoidance #1 Alternative would follow the same route as that for the proposed project, within an existing designated transmission corridor. The line would (a) be constructed, operated, and maintained according to SDG&E's guidelines for line safety and field management which conform to applicable LORS and (b) would traverse undisturbed desert land with no nearby residents, thereby eliminating the potential for residential electric and magnetic field exposures. Similar to the proposed project, adherence to the four conditions of certification recommended for the proposed project, any safety and nuisance impacts associated with the Drainage Avoidance #1 Alternative would be less than significant under CEQA.

Drainage Avoidance #2 Alternative would require new transmission lines within an existing designated corridor. Given the construction and maintenance requirements of

SDG&E and the lack of nearby residences, no impacts on residences or other facilities were identified. Like the proposed project, adherence to the four conditions of certification recommended for the proposed project would reduce any safety and nuisance impacts associated with Drainage Avoidance #2 Alternative to a less than significant level under CEQA.

Under the No Project/No Action alternative, the transmission line safety and nuisance impacts of the SES Solar Two project would not occur at the proposed site. This would help reduce the total human exposure to area field and non-field impacts from electric power lines in general.

Transmission System Engineering

The proposed Stirling Energy Systems Solar Two (SES Solar Two) Project outlet lines and termination are acceptable and would comply with all applicable LORS. The analysis of project transmission lines and equipment, both from the power plant up to the point of interconnection with the existing transmission network as well as upgrades beyond the interconnection that are attributable to the project have been evaluated by staff and are included in the environmental sections of this staff assessment.

Mitigation of thermal overloads caused by the Phase 1 under N-1 contingency analysis would require installing a 500/230kV, 1120 megavolt ampere (MVA) transformer bank at the existing Imperial Valley Substation. The transformer installation would occur within the fence line of the existing Imperial Valley Substation and would not trigger the need for compliance with the California Environmental Quality Act (CEQA).

- Mitigation of base case thermal overloads caused by Phase 2 would require installing a third 230/69 kV, 224MVA transformer bank at the existing Sycamore Substation. The transformer installation would occur within the fence line of the existing Sycamore substation and would not trigger the need for compliance with CEQA.
- The proposed SES Solar Two project should be designed and constructed with adequate reactive power resources to compensate the consumption of volt-amperes reactive (Var) by the generator step-up transformers, distribution feeders and generator tie-lines.

The outlet lines and termination of Phases 1 and 2 of the proposed SES Solar Two project would comply with all applicable LORS. The analysis of project transmission lines and equipment, both from the power plant up to the point of interconnection with the existing transmission network as well as upgrades beyond that interconnection that are attributable to the project have been evaluated by staff and are included in the environmental sections of this SA/EIS as project conditions.

- Mitigation of thermal overloads caused by Phase 1 of the proposed Solar Two project under N-1 contingency analysis would require installing a 500/230kV, 1120MVA transformer bank at existing Imperial Valley Substation.
- Mitigation of base case thermal overloads caused by Phase 2 of the proposed Solar Two project, would require installing a third 230/69 kV, 224MVA transformer bank at the existing Sycamore Substation.

- The proposed Solar Two project should be designed and constructed with adequate reactive power resources to compensate the consumption of Var by the generator step-up transformers, distribution feeders and generator tie-lines.

If the BLM and Energy Commission approve the proposed Solar Two project, staff recommends that the conditions of certification/mitigation measures provided earlier be met to ensure both system reliability and conformance with LORS.

Alternatives. Like the proposed project, this alternative would require fewer SunCatcher groups to generate 300 MW (phase one) of the project. Therefore, the 300 MW Alternative would require fewer distribution and substation facilities to be built within the project site. Additionally, this alternative would not cause any reconductoring of the SDG&E transmission system. Since this alternative would require fewer distribution and transmission facilities to be built in the project site; it would also result in fewer impacts to the environment and triggers less CEQA level analysis.

Like the proposed project, the transmission system required for the Drainage Avoidance #1 alternative requires new components. While System Impact Studies have not been completed for the smaller generation capacity of this alternative, it is likely that the outlet lines and termination facilities are acceptable and would comply with all applicable LORS.

Like the proposed project, the transmission system required for the Drainage Avoidance #2 alternative requires new components. While System Impact Studies have not been completed for the smaller generation capacity of this alternative, it is likely that outlet lines and termination are acceptable and would comply with all applicable LORS.

In the No Project / No Action Alternative, the proposed action would not be undertaken and no solar generating or transmission facilities would be constructed on the project site or connecting to the existing transmission grid.

Visual Resources

Staff have analyzed visual resource-related information pertaining to the proposed SES Solar Two Project and conclude that the proposed project would substantially degrade the existing visual character and quality of the site and its surroundings, including motorists on Interstate 8, recreational destinations within the Yuha Desert Area of Critical Environmental Concern and portions of the Juan Bautista de Anza National Historic Trail, resulting in significant impacts under CEQA.

In the absence of photometric data to the contrary, staff believes that diffuse reflection from the SunCatchers could be an intrusive and distracting nuisance to motorists under at least certain conditions, particularly when an entire row of units could be visible in a near-vertical position to approaching motorists at hours near sunrise and sunset. However, with staff-recommended Condition of Certification **VIS-6**, potential glare/reflection impacts could be reduced to less-than-significant levels under CEQA.

With staff-recommended Condition of Certification **VIS-7**, construction impacts could be mitigated to less-than-significant levels under CEQA.

Mitigation measures **VIS-1 through VIS-7** would be implemented as Conditions of Certification for the proposed SES Solar Two Project, however, because effective, feasible mitigation measures could not be identified by staff, these impacts are considered to be unavoidable.

Alternatives. Impacts of the 300 MW Alternative would remain significant under CEQA to Interstate 8 and Yuha Desert Critical Environmental Concern viewers, and unavoidable. However, the degree and extent of those impacts would be substantially less than those of the proposed project.

The Drainage Avoidance #1 Alternative would be located within the same outer project boundaries as the proposed project, but it would be less densely developed because of avoidance of permanent structures in the major drainages. Like the proposed SES Solar Two Project, the Drainage Avoidance #1 alternative would substantially degrade the existing visual character and quality of the site and its surroundings, including motorists on Highway I-8, recreational destinations within the Yuha Desert ACEC, and portions of the Juan Bautista de Anza National Historic Trail, resulting in significant impacts under CEQA. Overall, the level of impact would be similar to the Proposed Project Alternative. There are no effective, feasible mitigation measures that could be identified, so the impacts of the Drainage Avoidance #1 are considered to be significant under CEQA and unavoidable. Impacts of the Drainage Avoidance #1 Alternative would be substantially similar to the Proposed Project Alternative, and thus significant under CEQA and unavoidable.

The Drainage Avoidance #2 Alternative would be smaller in area than the proposed project, and it would result in similar impacts as the proposed project, but somewhat more concentrated. Impacts of this alternative would remain significant under CEQA to I-8 and Yuha Desert ACEC viewers, and unavoidable. However, like the 300 MW alternative, the degree and extent of those impacts would be substantially less than those of the proposed project. Although the degree and extent of these impacts would be substantially less than those of the proposed project, there are no effective, feasible mitigation measures that could be identified to reduce impacts of this alternative. As a result, the impacts of the Drainage Avoidance #2 are considered to be significant and unavoidable under CEQA.

Under the No Project/No Action Alternative visual impacts to the proposed project site and area would be similar as those currently occurring under the existing conditions in the area. Given that there would be no substantial change over the existing conditions, the anticipated impacts of the No Project/No Action alternative would be less-than-significant under CEQA.

Waste Management

Management of the waste generated during construction and operation of the SES Solar Two Project would not generate a significant impact under CEQA regarding waste management and would be consistent with the applicable waste management LORS if the measures proposed in the Application for Certification and staff's proposed conditions of certification are implemented. Similar to the proposed project, staff considers project compliance with applicable waste management LORS and staff's conditions of certification to be sufficient to ensure that no significant impacts under

CEQA would occur as a result of waste management associated with the 300 MW alternative, Drainage Avoidance #1 alternative and Drainage Avoidance #2 alternative.

After review of the applicant's proposed waste management procedures, staff concludes that project wastes would be managed in compliance with all applicable waste management LORS. Staff notes that construction, demolition, and operation wastes would be characterized and managed as either hazardous or non-hazardous waste. All non-hazardous wastes would be recycled to the extent feasible, and nonrecyclable wastes would be collected by a licensed hauler and disposed of at a permitted solid waste disposal facility. Hazardous wastes would be accumulated onsite in accordance with accumulation time, and then properly manifested, transported to, and disposed of at a permitted hazardous waste management facility by licensed hazardous waste collection and disposal companies.

However, to help ensure and facilitate ongoing project compliance with LORS, staff proposes Conditions of Certification **WASTE-1** through -**8**. These conditions would require the project owner to do all of the following:

- Ensure the project site is investigated and any contamination identified is remediated as necessary, with appropriate professional and regulatory agency oversight (**WASTE-1** and **-2).**
- Prepare Construction Waste Management and Operation Waste Management Plans detailing the types and volumes of wastes to be generated and how wastes would be managed, recycled, and/or disposed of after generation (**WASTE-3** and **-7**).
- Obtain a hazardous waste generator identification number (**WASTE-4**).
- Ensure that all spills or releases of hazardous substances are reported and cleaned-up in accordance with all applicable federal, state, and local requirements (**WASTE-8**).
- Comply with waste recycling and diversion requirements (**WASTE-6**).
- Report any waste management-related LORS enforcement actions and how violations would be corrected (**WASTE-5**).

The existing available capacity for the Class III landfills that may be used to manage nonhazardous project wastes exceeds 3.73 million cubic yards, with another 600 million cubic yards of capacity expected in the future with full operation of the Mesquite Regional Landfill. The total amount of non-hazardous wastes generated from construction, demolition and operation of the Solar Two Project would contribute much less than 1% of the projected landfill capacity. Therefore, disposal of project generated non-hazardous wastes would have a less than significant impact on Class III landfill capacity under CEQA.

In addition, the two Class I disposal facilities that could be used for hazardous wastes generated by the construction and operation of the SES Solar Two Project have a combined remaining capacity in excess of 16 million cubic yards, with another 4.6 to 4.9 million cubic yards of proposed capacity. The total amount of hazardous wastes generated by the SES Solar Two Project would be less than significant under CEQA in relation to the remaining permitted capacity. Therefore, impacts from disposal of SES

Solar Two Project generated hazardous wastes would also have a less than significant impact on the remaining capacity at Class I landfills under CEQA.

Staff concludes that management of the waste generated during construction and operation and decommissioning of the SES Solar Two Project would not result in any significant adverse impacts under CEQA, and would comply with applicable LORS, if the waste management practices and mitigation measures proposed in the SES Solar Two Project AFC and staff's proposed conditions of certification are implemented.

Alternatives. The 300 MW alternative would generate similar types of hazardous and non-hazardous wastes from construction, demolition and operation of the project. However, the quantities of waste would be reduced by 60 percent. The amount of non-hazardous and hazardous solid wastes generated under a 300 MW alternative that would require landfill/treatment would be approximately 5,600 and 20 cubic yards, respectively. Similar to the proposed project, staff would not require investigation and remediation of soil and groundwater contamination. similar to the proposed project, staff considers project compliance with LORS and staff's conditions of certification to be sufficient to ensure that no CEQA significant impacts would occur as a result of waste management associated with the 300 MW alternative.

The Drainage Avoidance #1 Alternative would generate similar types of hazardous and non-hazardous wastes from construction, demolition and operation of the project. However, the quantities of waste would be reduced due to the reduced use of the site required by avoiding the primary drainages and the reduced number of SunCatchers. The amount of non-hazardous and hazardous solid wastes generated under this alternative that would require landfill/treatment would be reduced in comparison to the proposed project. Similar to the proposed project, staff considers project compliance with LORS and staff's conditions of certification to be sufficient to ensure that no CEQA significant impacts would occur as a result of waste management associated with the Drainage Avoidance #1 alternative.

The Drainage Avoidance #2 Alternative would generate similar types of hazardous and non-hazardous wastes from construction, demolition and operation of the project. However, the quantities of waste would be substantially reduced due to the reduced use of the site required by avoiding the major drainages at the east and west ends of the property. Similar to the proposed project, staff considers project compliance with LORS and staff's conditions of certification to be sufficient to ensure that no CEQA significant impacts would occur as a result of waste management associated with the Drainage Avoidance #2 Alternative.

In the No Project/No Action Alternative, the proposed action would not be undertaken. Therefore, waste management associated impacts of the proposed project would not occur.

Worker Safety and Fire Protection

Staff conclude that if the applicant for the proposed SES Solar Two Project provides project construction safety and health and project operations and maintenance safety and health programs, as required by conditions of certification **WORKER SAFETY -1, -2, -3, -4, -5,** and **-6**, the project would incorporate sufficient measures to both ensure

adequate levels of industrial safety and comply with applicable LORS. These proposed conditions of certification ensure that these programs, proposed by the applicant, would be reviewed by the appropriate agencies before they are implemented. The conditions also require verification that the proposed plans adequately ensure worker safety and fire protection and comply with applicable LORS.

Staff also concludes that the proposed project would not have significant impacts under CEQA on local fire protection services. The fire risks at the proposed facility do not pose substantial added demands on local fire protection services. Staff also concludes that the El Centro Fire Department is adequately equipped and staffed to respond to hazardous materials incidents at the proposed facility with an adequate response time, given the remote location of this project.

Staff conclude that if the applicant for the proposed SES Solar Two Project provides project construction safety and health and project operations and maintenance safety and health programs, as required by conditions of certification **WORKER SAFETY -1**, and **-2**; and fulfills the requirements of conditions of certification **WORKER SAFETY-3** through**-6**, SES Solar Two Project would incorporate sufficient measures to ensure adequate levels of industrial safety and comply with applicable LORS. Staff also concludes that the proposed project would not have significant impacts under CEQA on local fire protection services.

Alternatives. Since the proposed project impacts are found to be less than significant under CEQA with the incorporation of conditions of certification, impacts of the 300 MW Alternative would be even smaller due to the smaller extent of construction disturbance and the smaller number of SunCatchers under this alternative. Like the proposed project, the construction and operation of the 300 MW Alternative would be in compliance with all applicable LORS for both long-term and short-term project impacts in the area of worker safety and fire protection with the adoption of the proposed conditions of certification. The mitigation that would be proposed for the 300 MW alternative would be the same as that proposed for the proposed project (staff recommended conditions **WORKER SAFETY-1** to **WORKER SAFETY-6**).

The types of construction and operational impacts of the Drainage Avoidance #1 Alternative would be the same as those of the proposed project. The proposed project impacts are found to be less than significant under CEQA with the incorporation of conditions of certification, and impacts of this alternative would be even smaller due to the smaller extent of construction disturbance and the smaller number of SunCatchers of the alternative. Like the proposed project, the construction and operation of the Drainage Avoidance #1 Alternative would be in compliance with all applicable LORS for both long-term and short-term project impacts in the area of worker safety and fire protection with the adoption of the proposed conditions of certification. The mitigation that would be proposed for the Drainage Avoidance #1 Alternative would be the same as that proposed for the proposed project (staff recommended conditions **WORKER SAFETY-1** to **WORKER SAFETY-6**).

Like the proposed project, the construction and operation of the Drainage Avoidance #2 alternative would be in compliance with all applicable LORS for both long-term and short-term project impacts in the area of worker safety and fire protection with the

adoption of the proposed conditions of certification. The mitigation that would be proposed for the Drainage Avoidance #1 Alternative would be the same as that proposed for the proposed project (staff recommended conditions **WORKER SAFETY-1** to **WORKER SAFETY-6**).

As staff concludes that the proposed project would not have substantial impacts on local fire protection services, it would not cause a under CEQA impact on the public. Thus Staff concludes that the No Project/No Action alternative would not avoid or lessen a significant impact under CEQA compared to the proposed project. Staff concludes that if the applicant for the proposed SES Solar Two Project provides project construction safety and health and project operations and maintenance safety and health programs, as required by proposed **WORKER SAFETY** conditions of certification; SES Solar Two would incorporate sufficient measures to ensure adequate levels of industrial safety and comply with applicable LORS. As worker safety is a LORS-conformity requirement, the No Project/No Action alternative consideration is not applicable to the worker safety topic.

NOTEWORTHY PUBLIC BENEFITS

Staff has identified the following public benefits.

1. Greenhouse gas (GHG) related noteworthy public benefits include the construction and operation of renewable and low-GHG emitting generation technologies and the potential for successful integration into the California and greater WECC electricity systems. Renewable energy facilities, such as the Solar Two Project, are needed to meet California's mandated renewable energy goals.
2. The SES Solar Two Project would employ an advanced solar thermal technology. Solar energy is renewable and unlimited. The project would have a less than significant adverse impact under CEQA on nonrenewable energy resources (natural gas). Consequently, the project would help in reducing California's dependence on fossil fuel-fired power plants.
3. The science of paleontology is advanced by the discovery, study and duration of new fossils. These fossils can be substantial if they represent a new species, verify a known species in a new location and/or if they include structures of similar specimens that had not previously been found preserved. In general, most fossil discoveries are the result of excavations, either purposeful in known or suspected fossil localities or as the result of excavations made during earthwork for civil improvements or mineral extraction. Proper monitoring of excavations at the proposed SES Solar Two facility, in accordance with an approved Paleontological Monitoring and Mitigation Plan, could result in a benefit to the science of paleontology and should minimize the potential to damage a substantial paleontological resource.
4. It is noteworthy that a solar electric generating facility such as the proposed SES Solar Two Project would emit substantially less toxic air containment (TACs) to the environment than other energy sources available in California such as natural gas or biomass, thereby reducing the health risks that would otherwise occur with these non-renewable energy sources. At the same time, the proposed Solar Two Project

would provide much needed electrical power to California residences and businesses, and would contribute to electric reliability. Electrical power is not only necessary to maintain a functioning society, but it also benefits many individuals who rely on powered equipment for their health (such as dialysis equipment and temperature control equipment). For example, it is documented that during heat waves in which elevated air-conditioning use causes an electrical blackout, hospitalizations and deaths due to heat stroke are increased and injury/deaths rise from indirect impacts when public safety measures are lost (traffic lights, elevators, etc.).

5. Important public benefits discussed under the fiscal and non-fiscal effects section are: capital expenditures, construction and operation payroll, and sales tax.

116°0'0"W

Renewergy, LLC CACA 048004

Plaster City

TelStar Energies, LLC - Shell Canyon CACA 051337

Ocotillo Express, LLC - Palm Canyon Wash CACA 047518

Ocotillo Express, LLC CACA 051552

Ocotillo Express, LLC - Sugarloaf Mountain CACA 050916

Ocotillo

CACA 050916

Stirling Energy-Solar Two CACA 047740

CACA 047740

Seeley

Imperial

El Centro

Heber

98

LEGEND

- Project Boundary (6,017 acres)
- Wind Energy Projects
- Bureau of Land Management
- Military
- State
- Private/Other

Regional Setting with Vicinity Projects
Stirling Energy - Solar Two Project
CACA 047740

NGS TOPO 100K Image

US Department of the Interior
BUREAU OF LAND MANAGEMENT
California State Office
Sacramento, California
(916) 978-4400
www.ca.blm.gov

Date Prepared: 2/8/2010

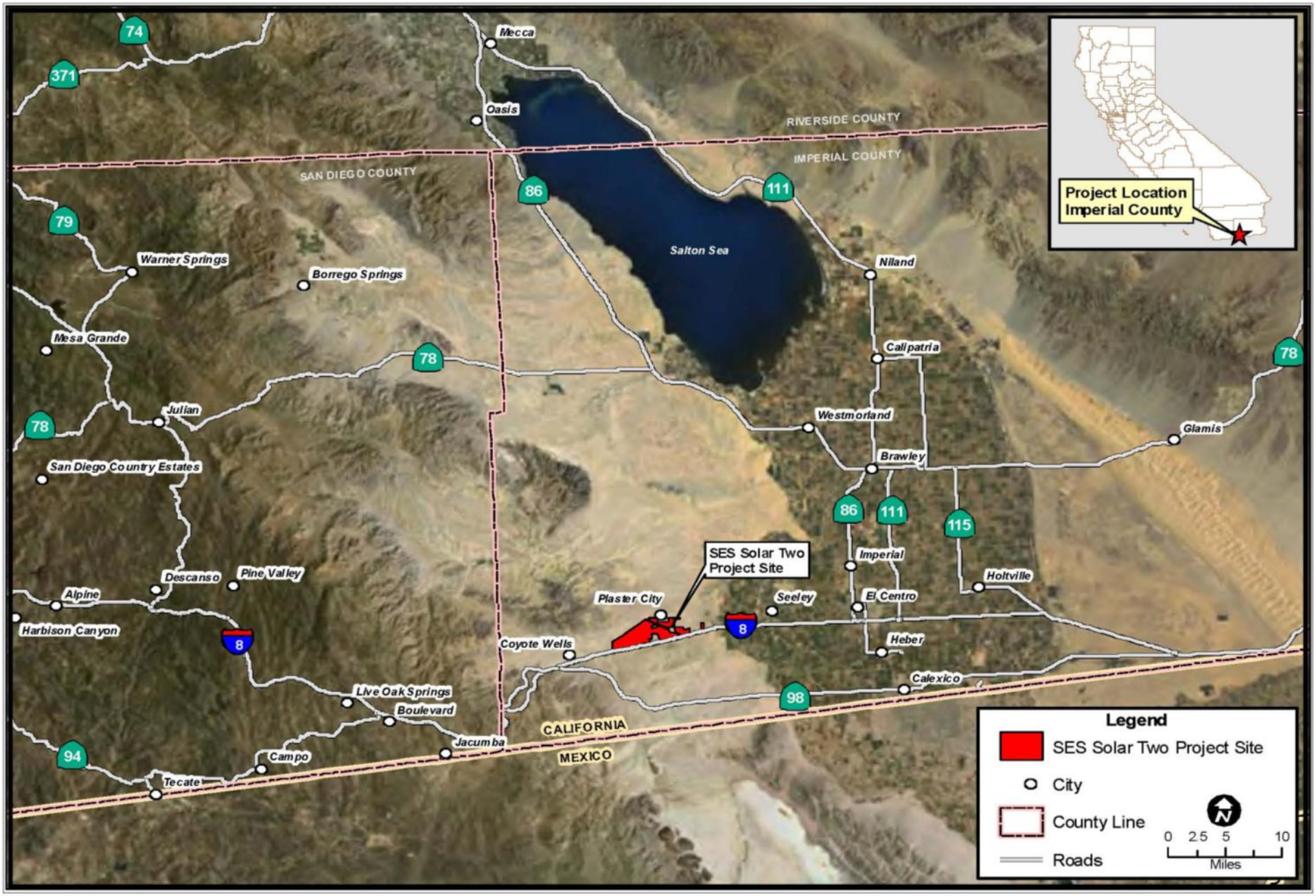
N

0 0.5 1 2 Miles

SCALE: 1" = 2.5 Miles (1:158,400)
SCALE CORRECT WHEN PRINTED AT 11X17

PROJECT DESCRIPTION - FIGURE 1

SES Solar Two - Regional Overview Map

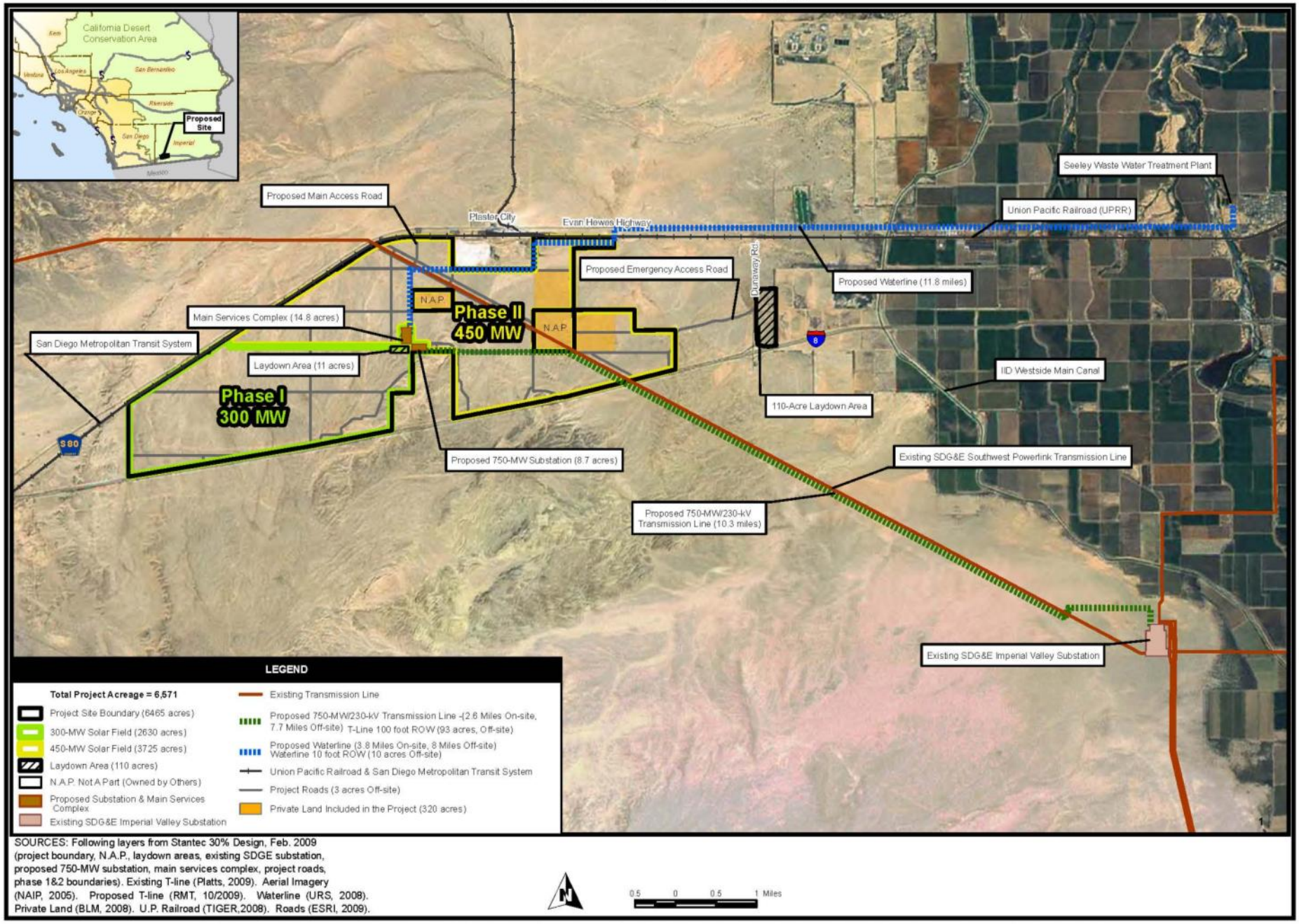


CALIFORNIA ENERGY COMMISSION, SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION, FEBRUARY 2010

SOURCE: ESRI Image - Multinet 09 Roads- URS Corp.

PROJECT DESCRIPTION - FIGURE 2

SES Solar Two - Project Overview Map



SOURCES: Following layers from Stantec 30% Design, Feb. 2009 (project boundary, N.A.P., laydown areas, existing SDGE substation, proposed 750-MW substation, main services complex, project roads, phase 1&2 boundaries). Existing T-line (Platts, 2009). Aerial Imagery (NAIP, 2005). Proposed T-line (RMT, 10/2009). Waterline (URS, 2008). Private Land (BLM, 2008). U.P. Railroad (TIGER,2008). Roads (ESRI, 2009).

FEBRUARY 2010

PROJECT DESCRIPTION

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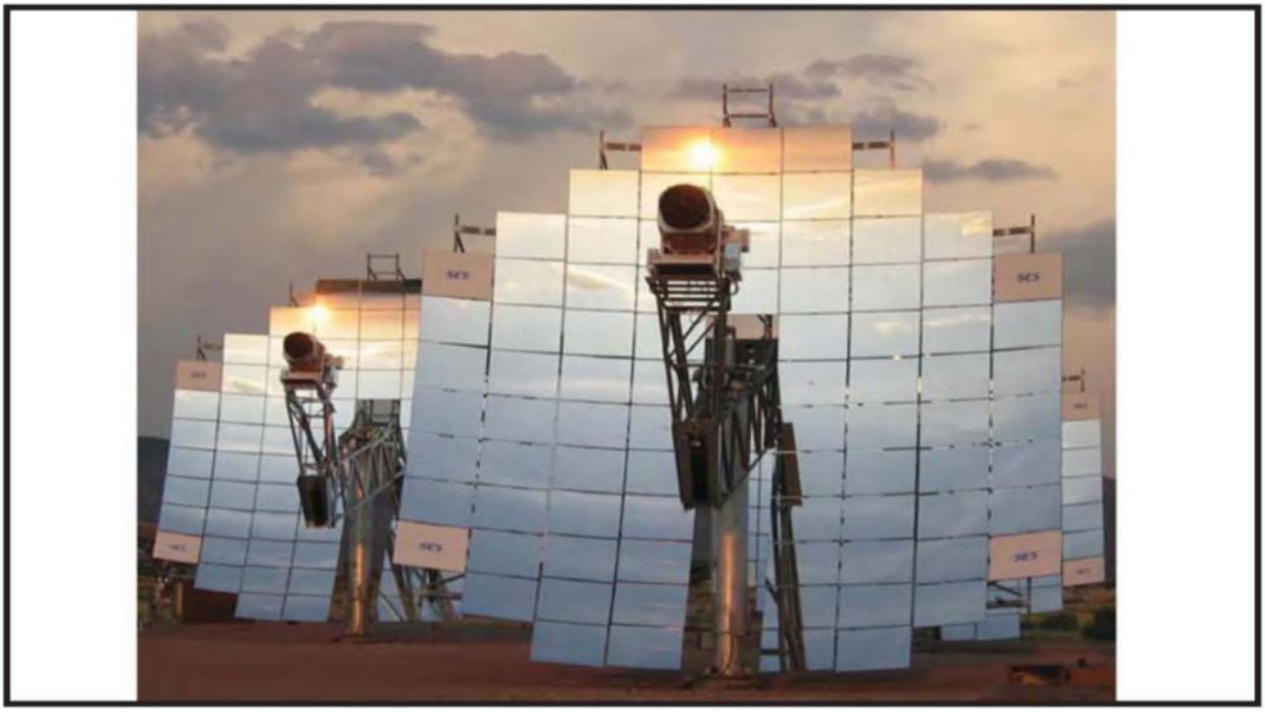
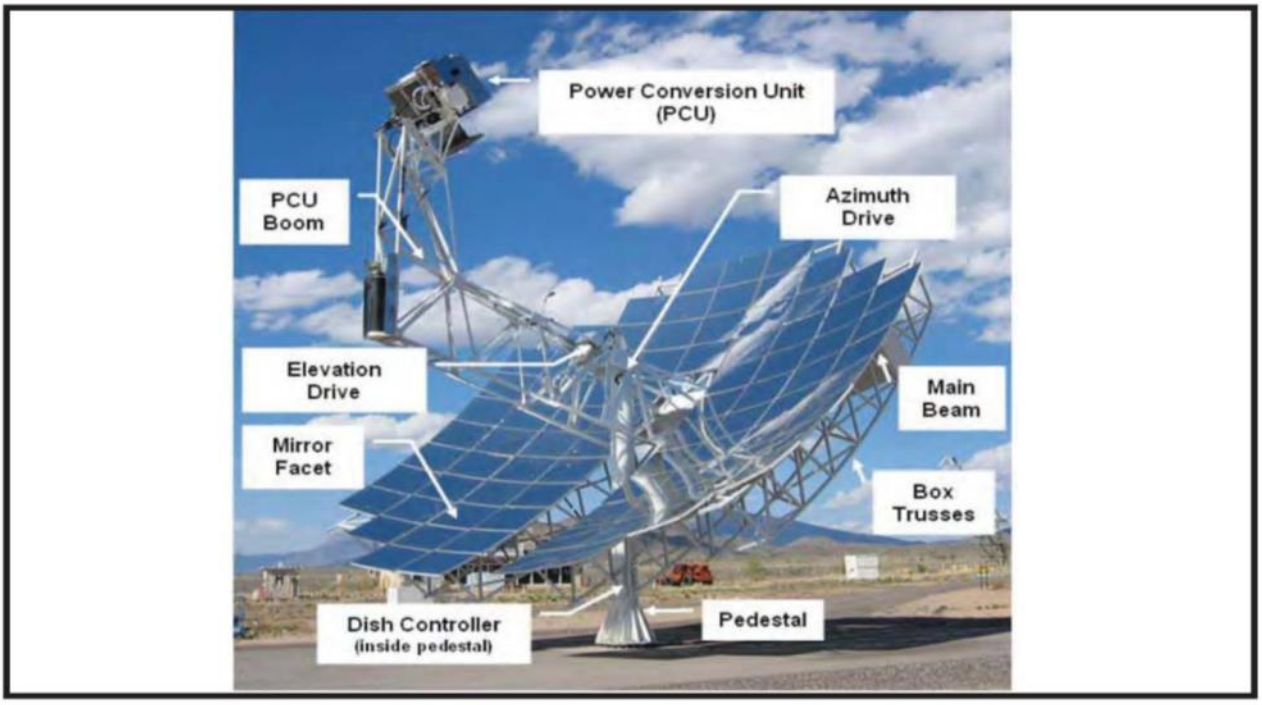
SOURCE: 08-AFC-5, Figure 1

PROJECT DESCRIPTION - FIGURE 3
SES Solar Two - SunCatcher Details





CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION, FEBRUARY 2010
SOURCE: AFC Photograph 1-1 and 1-2

ALTERNATIVES - FIGURE 1A
SES Solar 2 - 300 MW Alternative

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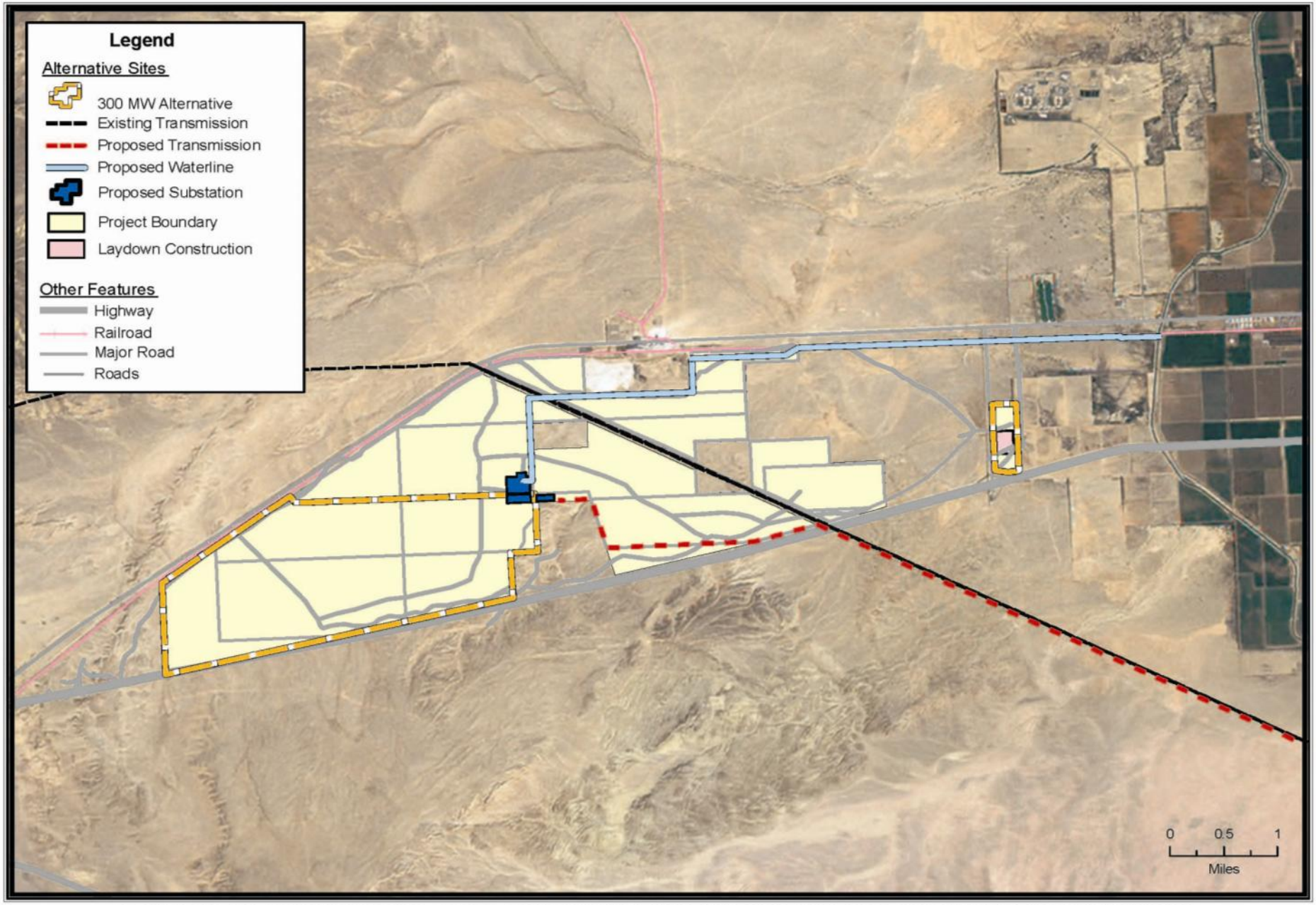
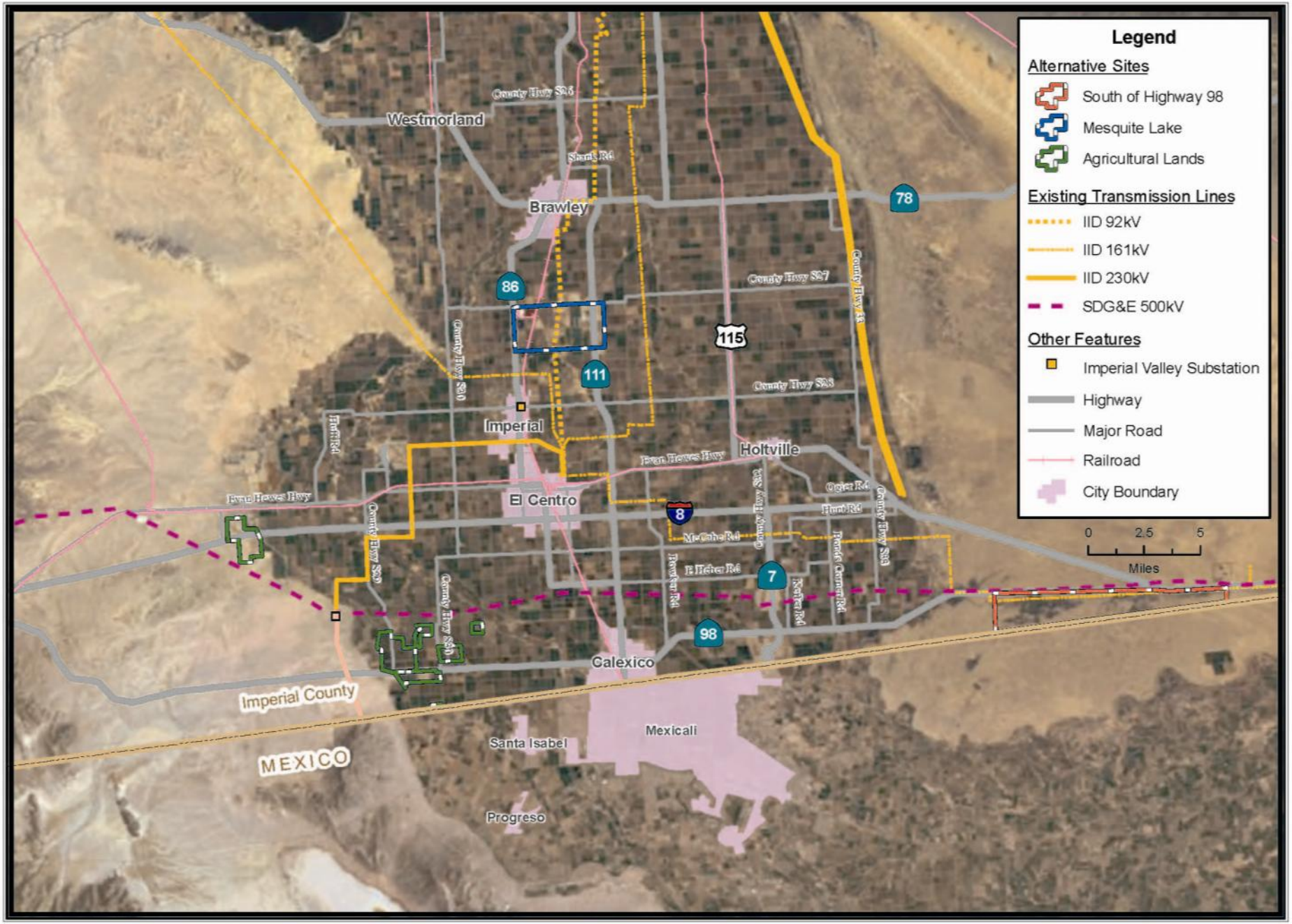


ALTERNATIVES

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION, FEBRUARY 2010
SOURCE: California Energy Commission

ALTERNATIVES - FIGURE 2

SES Solar 2 - Site Alternatives Evaluated under CEQA



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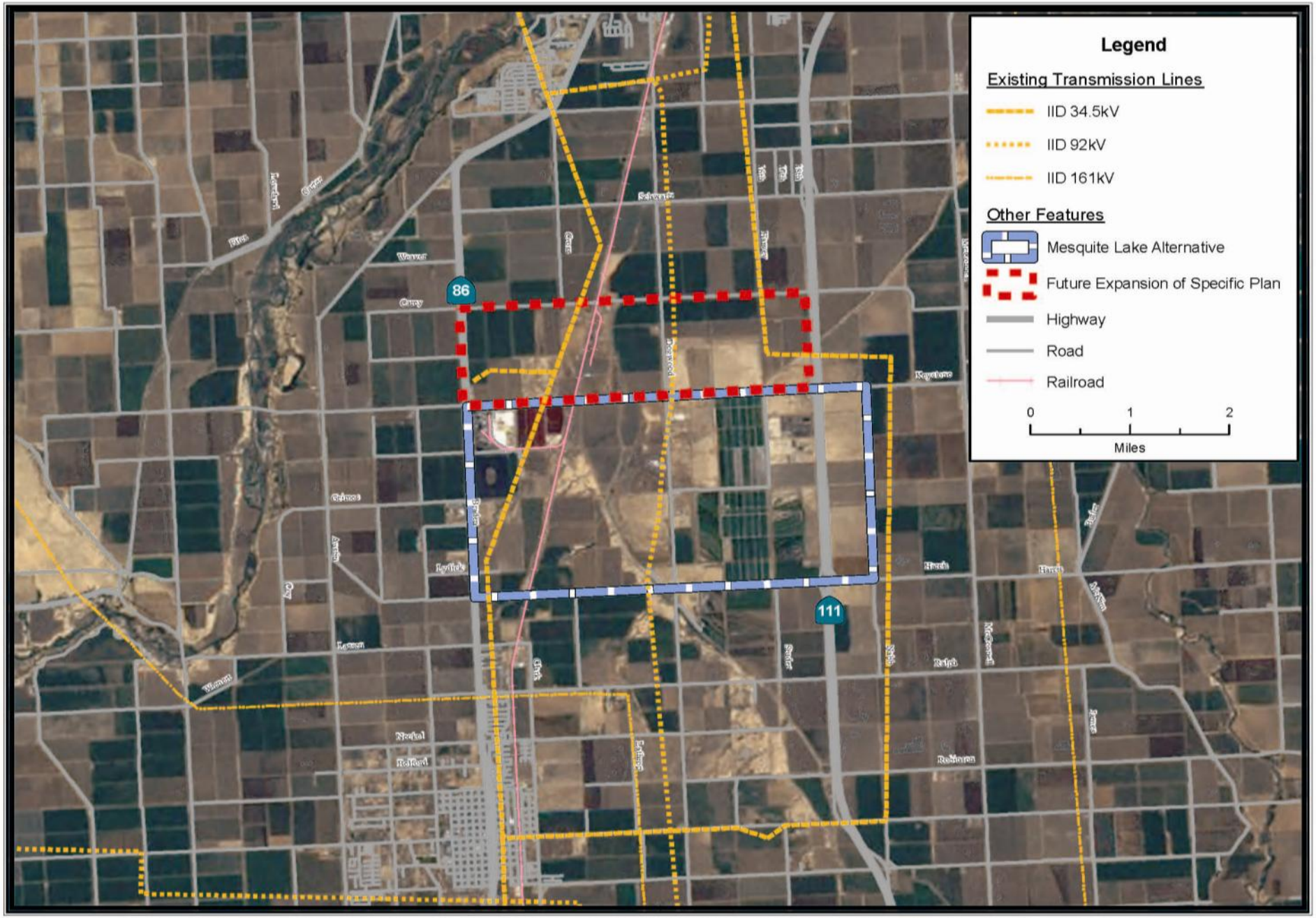
SOURCE: California Energy Commission

ALTERNATIVES - FIGURE 3

SES Solar 2 - Mesquite Lake Alternative



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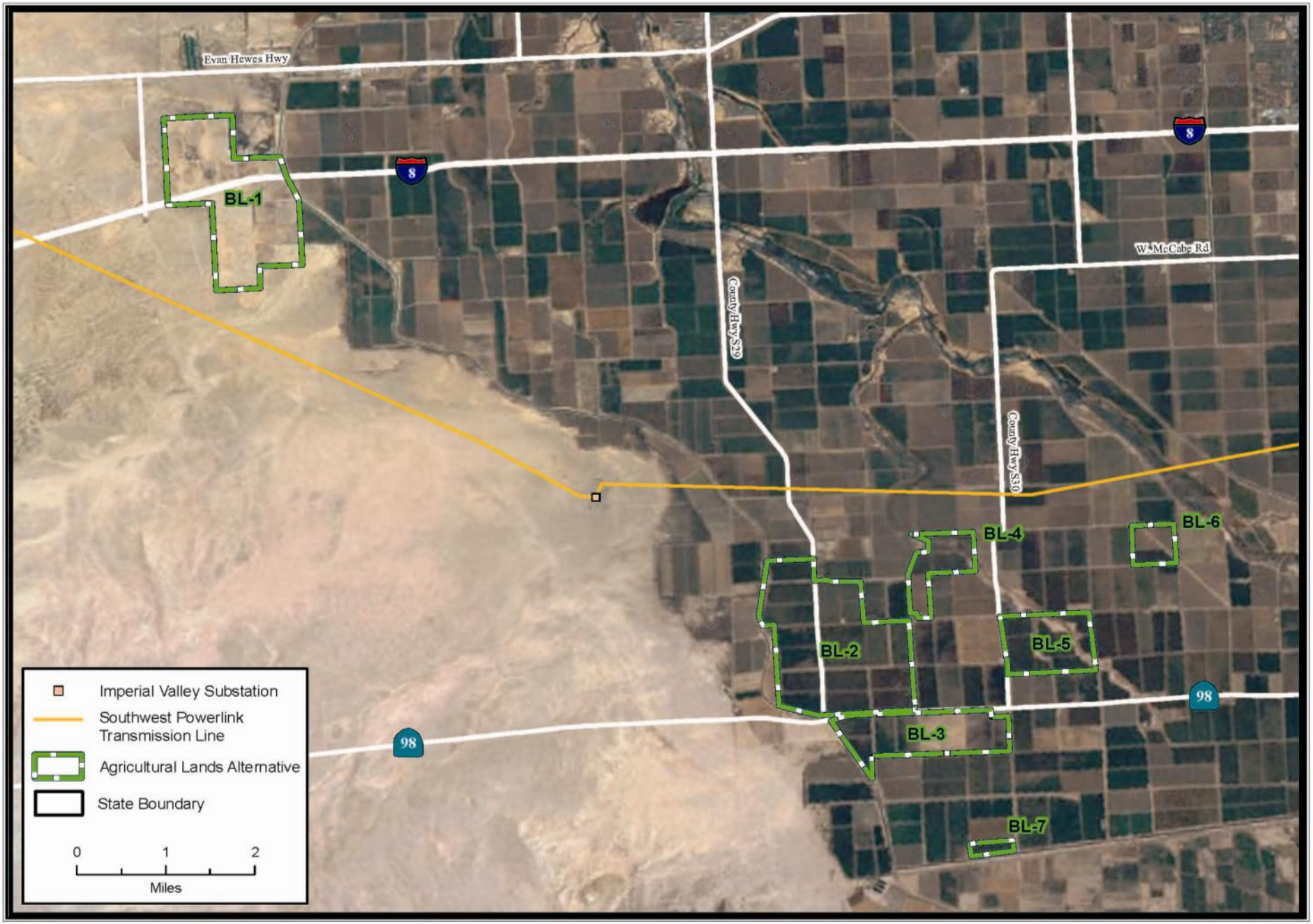
SOURCE: California Energy Commission

ALTERNATIVES - FIGURE 4

SES Solar 2 - Agricultural Lands Alternative



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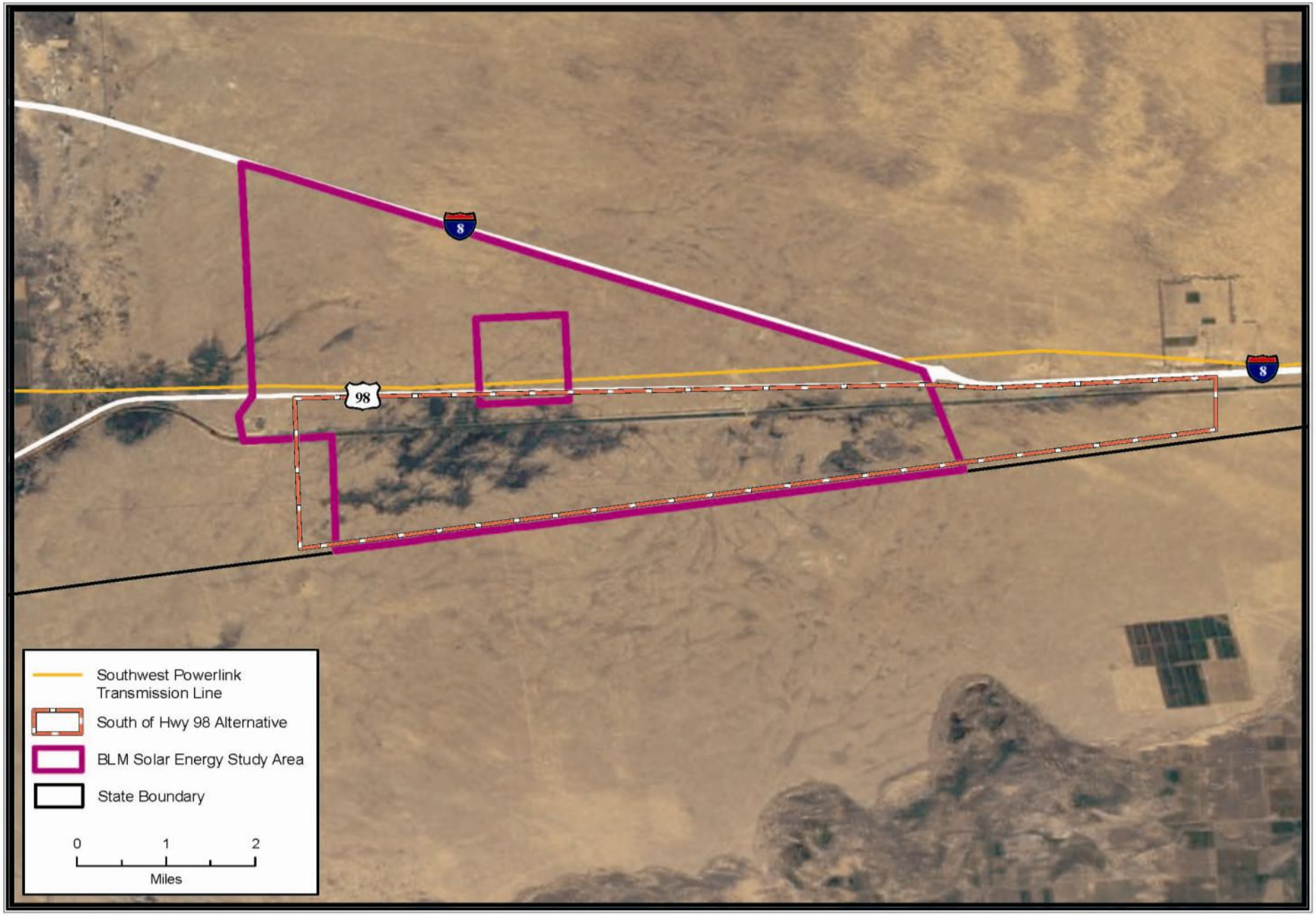
SOURCE: California Energy Commission

ALTERNATIVES - FIGURE 5

SES Solar 2 - South of Hwy 98 Alternative



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ALTERNATIVES

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SOURCE: California Energy Commission